

Ohlen's Catalogue No. 52

S A W S

Tools and Supplies

MANUFACTURED BY

THE JAMES OHLEN & SONS
SAW MANUFACTURING CO.

COLUMBUS, OHIO, U. S. A.

Factory Street

Eastern and Export Office

New York City, U. S. A.

118 Liberty Street

"Ohlen's Goods Warranted"

General Offices of
The JAMES OHLEN & SONS
Saw Manufacturing Co.

ESTABLISHED 1852

COLUMBUS, O., U. S. A., Jan. 1, 1904.

To Saw Purchasers:

With the closing of the past year, completed the fifty-first year of our existence in the manufacturing of the Ohlen Solid and Inserted tooth, circular saw. Previous catalogs published by this Company in former years, set forth the claims made for our saws in such plain form that it is hardly necessary to go into detail in explaining the way the **Ohlen** saw is manufactured.

The demand for our goods the past year has never before been equalled in the history of our Company. The general success of the **Ohlen** Saw has been beyond our greatest expectations and our competitors have no doubt been much surprised, not being familiar with what care we exercise in selecting material, mechanics and machinery that produce the **Ohlen Saw**.

Any one that has purchased either for selling or for personal use, an Ohlen Solid or Inserted tooth saw, is familiar with the guarantee and no one can offer such a liberal and broad warranty unless the goods are made as near perfect as it is possible for mechanics and a high grade of material to produce. We will guarantee any user of saws to give him absolutely the best saw that is on the market to-day. Our facilities for turning out good work promptly and accurately is not excelled

in any country. We call particular attention to the

Tempering

Of our saw. To get a saw that is perfectly tempered, one must first be careful in the selection of steel. We have adopted long since, the policy of using the very best English or American Steel, whichever the purchaser may wish. We have either in stock. It is made SPECIAL under our personal direction and under our own formula, which is not known to any of our competitors. This special steel used by the Ohlen Company only, is susceptible to a perfect temper and our process of installing this temper is of such a nature that it is evenly distributed throughout the entire body of the blade. The **Ohlen Saw** has become famous for its tough, even and perfect temper. This part of our work is done under the supervision of a man long in our employ and who has worked in nearly every department of our factory, so that he is capable of giving each saw a perfect temper and one that will be entirely satisfactory to the purchaser. For certain classes of work, we give one kind of temper; for another class of work, we give another, so that it will pay users of saws in ordering to specify in what section of the country they expect to run the saw and any further particulars that they may have at hand.

Grinding

We will call particular attention to the grinding of our saws. To anyone that has ever passed through our factory and witnessed the running of the powerful Grinding Machine that is under complete control of the operator by the use of levers and wheels, he will readily understand why it is that no one ever purchased an

Ohlen Saw and found it full of lumps and ridges. It is absolutely a mechanical impossibility for this saw after it passes through the grinding machine to be anything other than perfect and absolutely free from lumps and ridges ; a visit to our factory would convince anyone of this fact. We carefully select personally every grind stone that enters our factory and know that each is as near perfect as can be quarried.

Saw Smithing And Hammering

This is a none the less important part of manufacturing saws. It is with the hammer that the saws are first straightened as they come from the furnace, and this department is under the personal direction of absolutely the most skilled saw smith in the country ; not only skilled in the manufacturing of saws but in the caring for them in some of the largest and most successful lumber plants in the United States and Canada, so that his experience is not only theoretical but practical as well. After the saw is blocked, it is personally put on a mandrel and tested before it leaves that department, and if it varies the one thousandth of an inch, it is adjusted until it is perfect. Throughout the entire process of manufacturing these saws, it is a well known fact that they are watched carefully in every way and in particular as to the temper, and if one mechanic permits a saw to go through his hands that is not tempered correctly, it is an unwritten law that the next man must catch it and turn it back and the saw must be made over again. We have a corps of assistants to our head saw maker that are artists in their line and turn out complete work in every sense of the word.

Saws Inspected

We have in our employ an inspector who does nothing but file and swedge saws and test the tempering of each and every one, whether it is necessary that they be swedged or not, so that the purchaser of saws is reasonably certain that he is getting something that will give him entire satisfaction.

Factory Supervision

Our factory is supervised by a competent and practical skilled mechanic who has been in our employ some nineteen years. His skill, aided by the heads of our various departments, is constantly on the alert to improve what lumber people are pleased to term, viz :

"Ohlen Saws, Solid and Inserted Tooth, Best On Earth"

We might devote volumes in treating of innumerable points that would show what care we exercise in manufacturing our saws and specialties, but it is hardly necessary in this book because it is a familiar fact with most saw users and purchasers as well, that the **Ohlen** is one of the most carefully made and as near perfect a saw as has ever been put on the market. We are always glad to welcome our patrons whether they wish to purchase or not. Any saw user or purchaser is always a welcome visitor in our factory. We are not unmindful of the courtesies received at the hands of our patrons and take this opportunity of extending them our many thanks and to assure them of our best efforts for prompt service in the future.

We beg to remain, courteously yours,

The James Ohlen & Sons Saw Mfg. Co.

L. W. SEYMOUR, General Manager.

NOTICE

ALL ORDERS from parties unknown to us must be accompanied with cash or good commercial reference, unless goods are shipped C. O. D. Delays can be saved by stating reference when ordering. Small articles not to exceed four pounds can be mailed at expense of purchaser at rate of one cent per ounce. All mail packages at purchaser's risk; if registered, the cost extra will be ten cents.

Remittances should be made by P. O. Money Order, Postal Note, Registered Letter, Exchange or by Express, which will insure prompt delivery. When sent by Express charges must be prepaid.

Shipping instructions, stating post-office, freight or express office, and county and state, will prevent delay and expense.

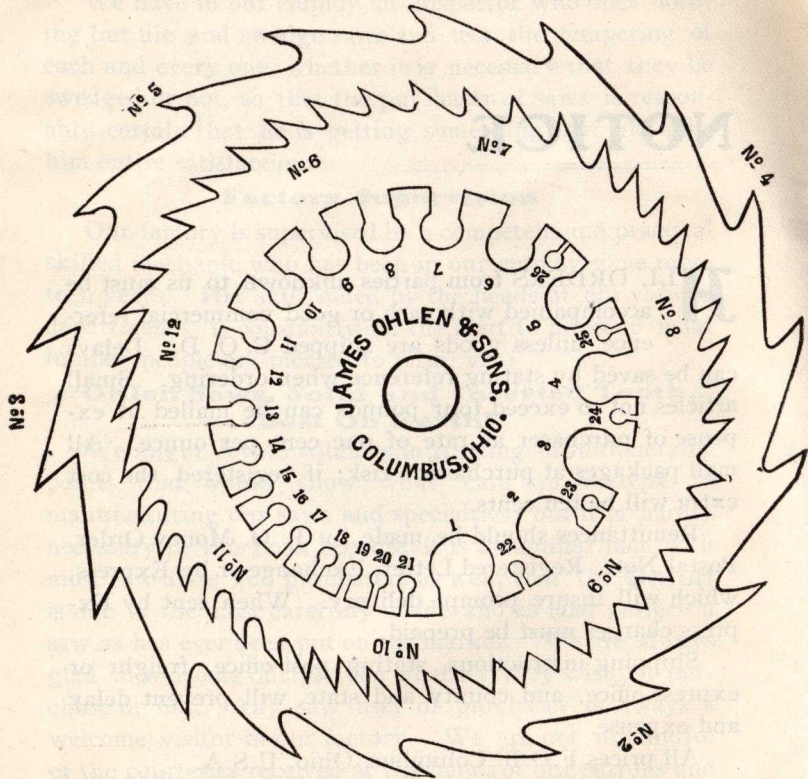
All prices F.O.B. Columbus, Ohio, U.S.A.

The James Ohlen & Sons Saw Mfg. Co.

INCORPORATED

Columbus, Ohio, U. S. A., and New York City, U. S. A.

Standard Gauge and Teeth



By consulting the above illustration, the party ordering can see just what kind of tooth is wanted. When ordering saws, use the above numbers, which will insure the proper tooth being sent.

Our Standard Gauge exactly Corresponds with Stubb's English Gauge.

No. 4..... $\frac{1}{4}$ inch scant
 No. 5..... $\frac{7}{32}$ inch
 No. 6..... $\frac{13}{64}$ inch
 No. 7..... $\frac{3}{16}$ inch scant

No. 8..... $\frac{5}{32}$ inch full
 No. 9..... $\frac{5}{32}$ inch scant
 No. 10..... $\frac{1}{8}$ inch full
 No. 11..... $\frac{1}{8}$ inch scant

No. 12..... $\frac{7}{64}$ inch
 No. 13..... $\frac{3}{32}$ inch
 No. 16..... $\frac{1}{16}$ inch full
 No. 22..... $\frac{1}{32}$ inch full

Terms of Warranty

CIRCULAR SAWS

EACH SAW is warranted free from flaws and seams and practically true. Any saw failing to run well will be rehammered free of charge, if immediately returned; or, if saw is found to be defective in any way, metal or temper, or tension, within 30 days from delivery a new one will be given in exchange.

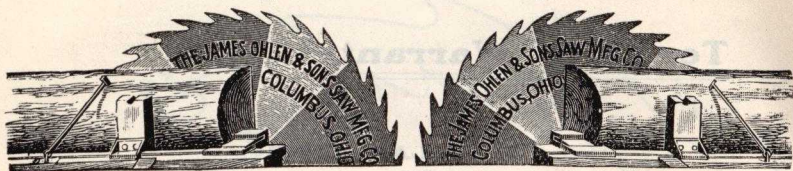
Saws cracked or broken as a result of filing square corners in gullet of a tooth, as is frequently the case, or from using a cold chisel or punch in retoothing, are not covered by our warranty. Use a round edge file and prevent saw from cracking.

Any alteration in the holes of circular saws by filing, reaming or otherwise, will generally spring the saw. When such changes are made our warranty does not apply.

The name of the "**James Ohlen & Sons**" Saw Manufacturing Company on a saw is a guarantee to the purchaser that it is of superior quality and reliability, and that we stand ready to back the warranty above issued. We guarantee to sell a better article than any other house in the world.

When Ordering Circular Saws

The following directions must be explicitly given:



Right Hand.

Left Hand.

Diameter in inches.

Thickness or gauge at rim.

Thickness or gauge at center.

Right or left hand (see illustration).

Number of Teeth.

Any special shape tooth wanted (if so, send a rough sketch).

Size of mandrel hole.

Size of pin hole.

Distance between pin hole from center to center.

Greatest feed in inches at each revolution.

Kind of lumber to be sawed.

Number of revolutions saw makes while in cut per minute.

Always state whether rip or cross-cut saws are wanted.

If above instructions are given accurately, we will guarantee not the least bit of trouble will be had with any saw, either Solid or Inserted Tooth, bearing our brand.

All stock saws 40 inches and above have 2-inch eye, two pin holes 5-8-inch, and 3 inch circle; if different is wanted, please send template.

Ohlen's Inserted and Chisel Tooth Saws

Even an inexperienced person looking at some of the illustrations of our Chisel tooth saws, as shown on the succeeding pages will appreciate the advantage in using

our saw in preference to any other on the market for one reason if for no other, viz:—

Our bit is supported by a shoulder which receives the pressure in not only usage but permits of the bit being swedged in the blade the same as a solid tooth saw, and it is absolutely impossible to get an Ohlen Inserted tooth saw out of round and it is due largely to the support that the bit has. It is quite a task to swedge a saw provided the operator is obliged to remove the bits from the blade and put them in a vise but this is not necessary in Ohlen's Inserted tooth, as anyone can swedge them the same as a solid tooth. It is plain to the observer that the strongest part of the blade is that which is farthest from the rim. We invite comparison on any point and this one in particular. The Ohlen Inserted tooth saw is just twice as expensive to manufacture as any other on the market for the reason that this shoulder that supports the tooth necessitates milling two circles, other makes have but one, notwithstanding this **Ohlen Inserted Tooth Saw** costs no more than others.

Our **Inserted Saw** is adapted to either hard or soft wood. Where purchasers know to a certainty that they will cut hard wood exclusively or soft wood exclusively, we could very easily give them a special saw for it, but if they want a saw that will cut either hard or soft wood, we would be very glad to make them up a saw that will do either and guarantee it thoroughly.

It requires very little effort to insert a new set of teeth in the blade. It is always necessary to dip the shank and bit in oil to prevent wearing and to see that the shank and bit is in perfect alignment with the blade and sits firmly upon the socket and shoulder. It requires but a very few minutes to do this. **Ohlen's Chisel Bits** are forged and tempered so accurately that in cutting the hardest kind of wood they will not break. We have known them to cut spikes and hinges but of course that is out of the ordinary, however we have had many customers to tell us that in cutting iron

or metal that was embodied in the timber, that the worst that could happen was to break out a few of the teeth which would cost to refill, something like 50 cts. to \$1.25 while if the saw had been a solid tooth, most all of the teeth would have been spoiled and the probabilities are the saw would have to be cut down, retooled and hammered at a probable cost of \$4 to \$12, and perhaps delaying the mill several days at quite a loss. Quite frequently such accidents would ruin a solid tooth saw entirely. At the most liberal calculation a new set of bits can be put in and the mill operating inside of 30 minutes and at a very small cost indeed. Seventy-five thousand feet of lumber is a small estimate for one set of bits to cut and we have known personally as high as 300 thousand feet of lumber to be cut with one set of bits, it depends upon the care that the saw receives and the kind of timber to be cut.

We give enough bits and shanks with each Inserted Tooth Saw to wear out any Solid Tooth Saw of similar size, and the owner still has left the blade as clear profit and is good for hundreds of extra sets of bits.

We are Pioneers in the manufacturing of saws of all kinds and we can sight users of saws today to some of the **"Ohlen Inserted Tooth Saws"** that have run constantly for **thirty years** and even longer.

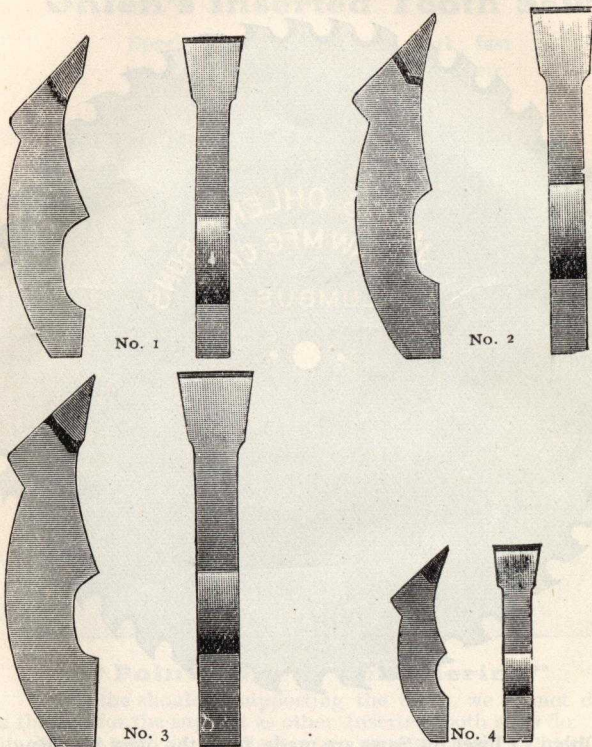
Our **Chisel Tooth Saws** are made from 10 to 72 inches in diameter and at gauges from 5 to 13 in thickness. We have a fine assortment of saws, all sizes and gauges, that we are able to ship promptly.

Purchasers of saws can rest assured that in buying the **Ohlen** production they are procuring the very best. Insist on your dealer handling our Saws or write us for direct shipment. Every saw is placed strictly upon its merits.

We guarantee our saws either Solid or Inserted to cut frozen timber as well as soft.

Ohlen's Four Styles of Chisel Bit Saws

Note Square Base, which sets on shoulder in blade.



The above shows our various styles of Inserted Tooth Bits.

No. 1 is the most commonly in use, as it will do on the highest feed as well as the lowest feed.

No. 2 is used mostly where few teeth are desired, although they will run at a high rate of speed.

No. 3 is used almost entirely on the Pacific Coast.

No. 4 is used for Edger work only. No. 1 makes also a most desirable edger.

All of our bits are made from 6 to 10 gauge, inclusive, excepting No. 3, which is made as thin as 13 gauge.

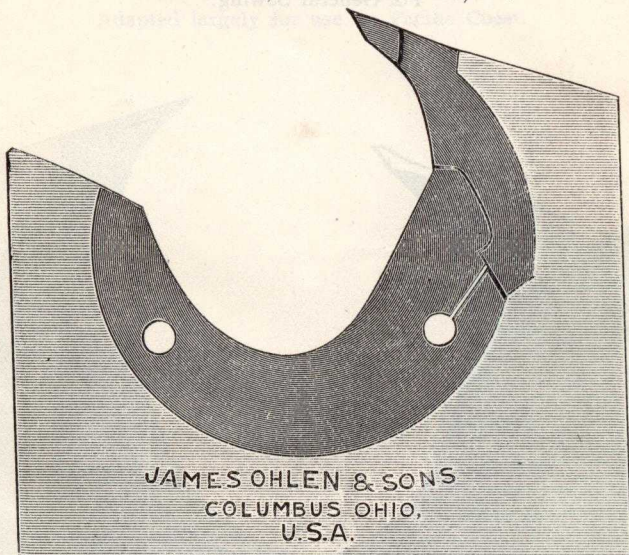
Champion Chisel Tooth Saws



Ohlen's Chisel Bit Saws are made from the very best English or American Steel obtainable and are given a tough, even temper same as a Solid Saw. These facts together with the shoulder that supports the bit assist in making "Our Inserted Tooth Saws" the most desirable. Our bit is swedged in the blade same as a solid saw and it cannot get out of round. All other manufacturers depend on the rim to support the tooth. The pressure in the usage and swedging will get the blade out of round unless the bit sets on the shoulder. Ours is the only one that has that supporting shoulder. You can easily see why the Sawyers prefer Ohlen's Chisel Bit Saws. They never give the user any trouble.

Style No. 1
Ohlen's Inserted Tooth Saw

Specially adapted for hard work; fast
or slow feeds; hard or soft wood, etc.



"Points Worth Considering"

Notice the shoulder supporting the tooth, we do not depend on the rim for the support as other Inserted tooth saws do.

Swedge teeth in the blade when you use Ohlen's Chisel Tooth saws, because you cannot get them out of round.

Ohlen's Inserted saw is the strongest, best and most simply constructed of any on the market; no wedges or plugs are used to support the teeth.

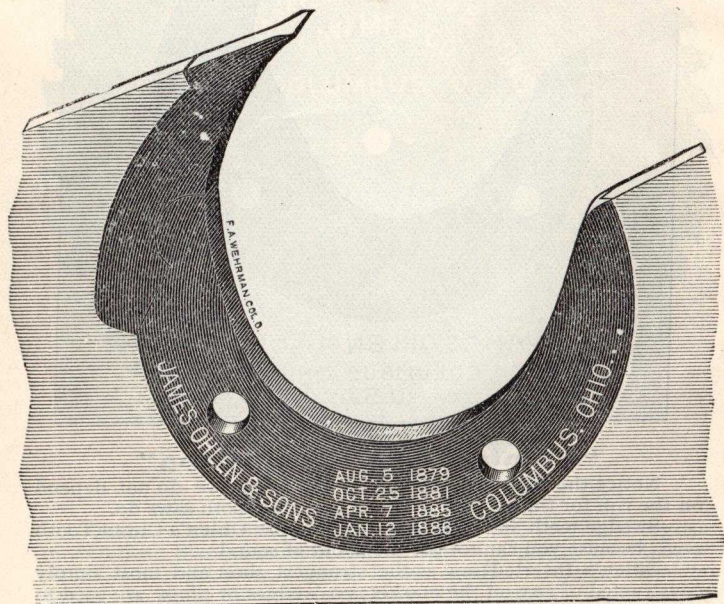
Compare our bit and its workings with any saw on the market.

Ohlen's Style No. 1 is especially adapted for high speeded saw mills and is the only Inserted tooth made that will run on an 8 or 12 in. feed, or by specifying fewer teeth when ordering a saw, we will guarantee it to run on the slowest feed made.

"Order Ohlen's Saws"

Style No. 2
PACIFIC

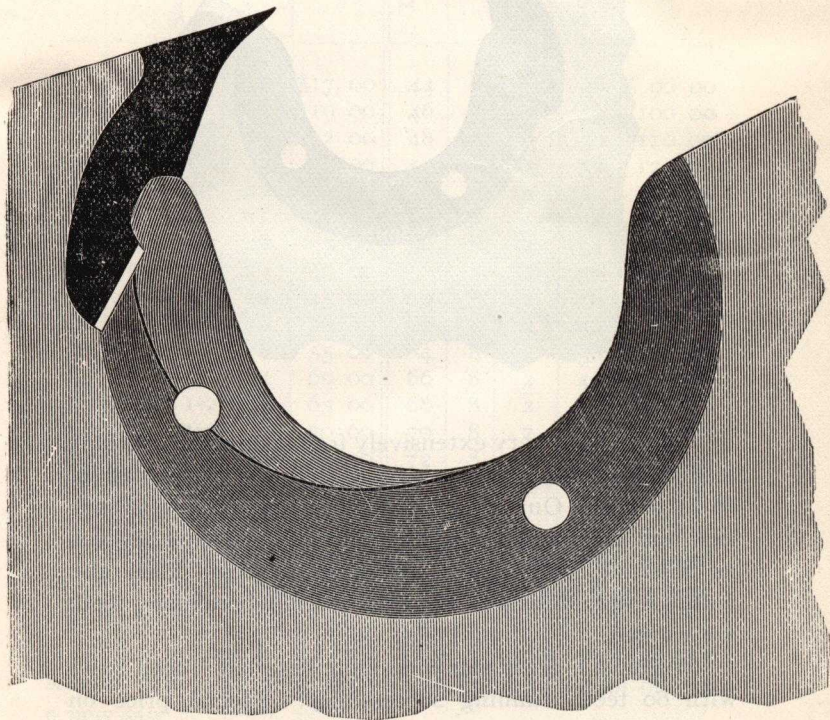
For General Sawing.



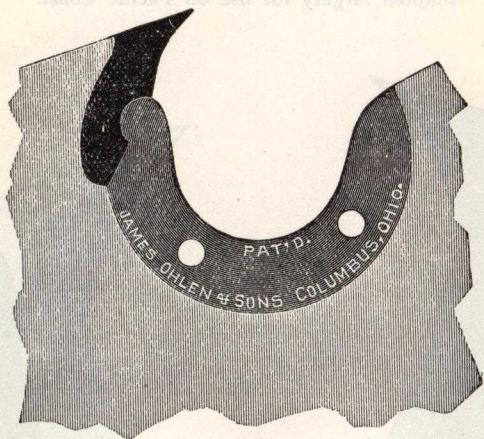
The above style used where a small number of teeth is desired, although it will stand up to 4 and 5 inch feed.

Style No. 3
COLUMBIA

Made from 5 to 9 gauge, inclusive.
Adapted largely for use on Pacific Coast.



Style No. 4 **CHALLENGE**



This is used very extensively for bench work or where a thin edger saw is desired. This tooth is made from 10 to 14 gauge. Our 13 gauge saw makes only 5-32 inch kerf and is rapidly taking the place of solid saws, as well as inserted tooth edgers of other makes. This also makes a very desirable saw of any size where many teeth are wanted.

We have a great many 60-inch Inserted Tooth Saws with 60 teeth running successfully. Special price on large sizes with larger number of teeth.

Champion Chisel Tooth Saws

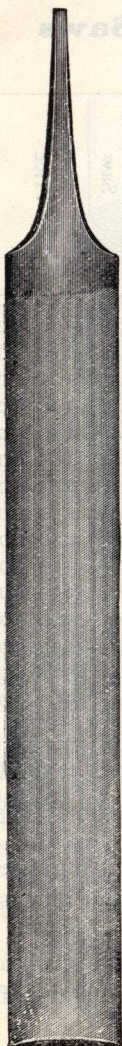
PRICE LIST

Diameter Inches	Gauge	Size Mandrel Holes	No. Teeth in Saw	Price	Diameter Inches	Gauge	Size Mandrel Holes	No. Teeth in Saw	Price
12	9	1	—	\$17 00	44	9	2	28	\$ 90 00
14	9	1	—	19 00	46	9	2	30	100 00
16	9	1 1-8	—	22 00	48	9	2	30	110 00
18	9	1 1-8	12	25 00	50	9	2	32	122 00
20	9	1 1-8	12	27 00	52	9	2	32	140 00
22	9	1 1-4	12	31 00	54	8	2	34	160 00
24	9	1 1-4	12	35 00	56	8	2	34	185 00
26	9	1 1-4	14	40 00	58	8	2	36	215 00
28	9	1 1-4	14	45 00	60	8	2	36	250 00
30	9	1 3-4	16	50 00	62	8	2	38	280 00
32	9	1 1-2	16	55 00	64	8	2	38	310 00
34	9	1 1-2	24	60 00	66	8	2	40	350 00
36	9	1 1-2	24	65 00	68	8	2	40	400 00
38	9	1 1-2	26	70 00	70	8	2	44	450 00
40	9	2	26	75 00	72	8	2	44	500 00
42	9	2	28	80 00	74	9	2	44	550 00

The Champion Chisel Tooth can be inserted in solid or other patent circular saws, reducing the size about two inches.

Price, per tooth, \$2.00. This includes putting the saw in running order, and the same number of bits as a new saw.

Our bits are made from extra fine steel, and given a fine temper. One set of bits will cut on an average of 75,000 feet, depending on care of operator.



Champion Chisel Tooth File

This FILE made expressly for our Champion Chisel Tooth Saw. It keeps the tooth in a hooked shape or same as when new. They will make teeth last longer, run with less power and cut smoother lumber than if filed with a common flat file.



No. 1, per dozen	\$4.00
No. 2, per dozen	3.00

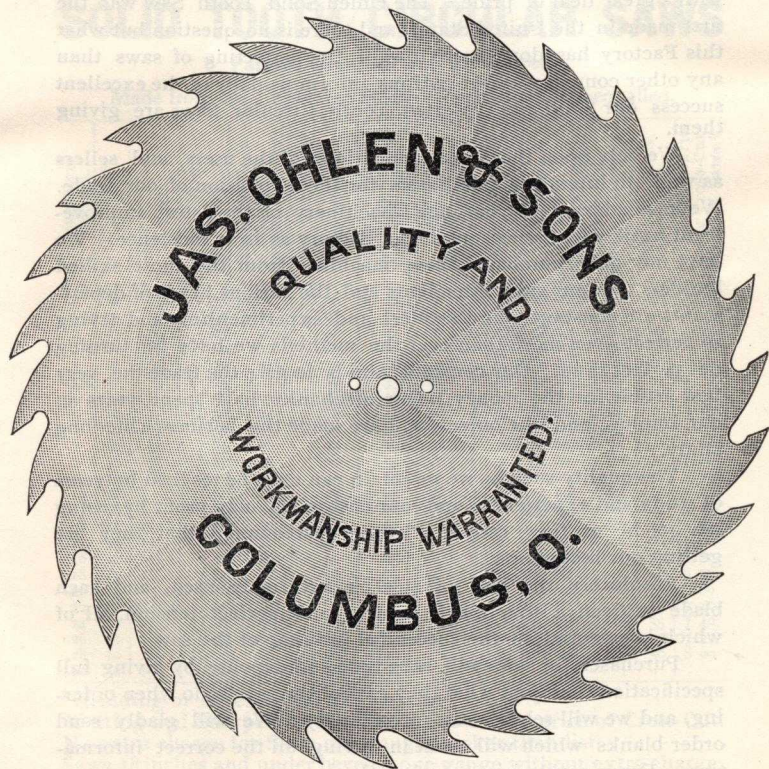
When ordering Bits or Shanks for our Inserted Tooth Saw, always give the Number of Saw, which is stamped on Blade near Trade Mark, or send a sample Bit.

Price of Repairs for Inserted Tooth Supplies.

Style 3 Columbia Bits per hundred	\$4 00
“ 1 Buckeye Bits, “ “	3 00
“ 2 Pacific Bits, “ “	3 00
Michigan Bits	3 00
Champion Bits	3 00
Columbia Shanks, Style 3,	60 cents each
Pacific Shanks, “ 2,	40 cents each
Buckeye Shanks “ 1,	40 cents each
Michigan Shanks	40 cents each
Champion Shanks	40 cents each



In ordering Teeth for our Saws specify the “Genuine Ohlen Bits” only. Accept no other.  



Over a Half Century's Experience In Manufacturing Saws

We can point to an unequalled record in manufacturing saws with a great deal of pride. The Ohlen Solid Tooth Saw was the first made in the United States, and there is no question but what this Factory has done more toward the perfecting of saws than any other company. Our patrons inform us daily of the excellent success our Solid and Inserted Tooth Circular Saws are giving them.

We rely upon the recommendations of the users, and sellers as well, to intending purchasers for the expansion of our trade. We have added each year new machinery of the latest improvement until we have as complete a Factory as is in existence. We have not only purchased these machines from the most skilled builders, but our superintendents and the various heads of departments are constantly on the alert and experimenting and trying to perfect even more than ever the methods we have for turning out perfect saws. Our constant aim is to give the trade the very best article for the money. Our mechanics have spent years in our employ, and like ourselves, have made the business a life-long study.

The quality such as we maintain can only be reached by years of study and experience, and our customers may profit by using our goods, as they can at all times rest assured that they are getting our best efforts.

Absolutely the best of steel is invariably used, and each blade is given a tough, even temper and perfect tension, all of which is essential to the successful running of the saw.

Purchasers of saws will save time and expense by giving full specifications and just what they expect the saw to do when ordering, and we will select a saw accordingly. We will gladly send order blanks which will assist in giving all the correct information. Every saw bearing our brand,

"The James Ohlen & Sons Saw Mfg. Co."

is fully warranted, and is an assurance that it is the very best that the market affords.

The James Ohlen & Sons Saw Manufacturing Co.

COLUMBUS, OHIO, and NEW YORK CITY, U. S. A.

New Prices Taking Effect January 1, 1903.

SOLID TOOTH CIRCULAR SAWS

Patent Ground and Tempered

Made from our Celebrated Steel. Workmanship unequalled.

Diameter, Inches.	Thickness Gauge.	Size of Hole, Inch.	List Price Each.	Extra for Each Additional Gauge (Heavier)	Price for Bevel- ing New Saws. *Per Gauge.	Setting & Sharp- ening Cross-Cut Circular Saws.*	Diameter, Inches.	Thickness Gauge.	Size of Hole, Inch.	List Price Each.	Extra for Each Additional Gauge (Heavier)	Price for Bevel- ing New Saws. *Per Gauge.	Setting & Sharp- ening Cross-Cut Circular Saws.*
1	24	$\frac{3}{8}$	\$ 0 55	\$ 0 01	\$ 0 06	\$ 0 20	32	10	$1\frac{3}{8}$	\$22 00	\$ 1 00	\$1 40	\$2 15
1½	24	$\frac{3}{8}$	60	01	07	22	34	9	$1\frac{5}{8}$	25 00	1 20	1 55	2 35
2	23	$\frac{3}{8}$	65	01½	08	24	36	9	$1\frac{7}{8}$	28 00	1 40	1 70	2 55
2½	22	$\frac{1}{2}$	70	02	09	27	38	9	$1\frac{7}{8}$	31 00	1 75	1 85	2 75
3	21	$\frac{1}{2}$	75	02½	10	30	40	9	2	36 00	2 00	2 05	2 95
3½	20	$\frac{1}{2}$	85	03	12	33	42	8	2	42 00	2 50	2 20	3 15
4	19	$\frac{3}{4}$	1 10	03	14	36	44	8	2	50 00	3 00	2 40	3 35
5	19	$\frac{3}{4}$	1 30	04	16	40	46	8	2	60 00	3 50	2 60	3 60
6	18	$\frac{3}{4}$	1 55	05	18	45	48	8	2	70 00	4 00	2 80	3 85
7	18	$\frac{3}{4}$	1 85	06	20	50	50	7	2	80 00	4 50	3 00	4 10
8	18	$\frac{7}{8}$	2 20	08	22	55	52	7	2	90 00	5 00	3 25	4 40
9	17	$\frac{7}{8}$	2 75	10	25	60	54	7	2	100 00	6 00	3 50	4 70
10	16	1	3 30	12	28	65	56	7	2	115 00	7 00	3 75	5 00
11	16	1	3 80	14	30	70	58	7	2	130 00	8 00	4 05	5 30
12	15	1	4 15	17	35	75	60	6	2	145 00	9 00	4 35	5 60
14	15	$1\frac{1}{8}$	5 00	21	40	85	62	6	2	160 00	10 00	4 66	5 90
16	14	$1\frac{1}{8}$	6 00	25	50	95	64	6	2	180 00	12 00	5 00	6 20
18	13	$1\frac{1}{4}$	7 50	30	60	1 05	66	6	2	200 00	15 00	5 35	6 50
20	13	1 5-16	9 00	35	70	1 15	68	5	2	225 00	18 00	5 75	6 80
22	12	1 5-16	11 00	45	80	1 30	70	5	2	255 00	21 00	6 15	7 10
24	11	$1\frac{3}{8}$	13 00	55	90	1 45	72	5	2	290 00	24 00	6 55	7 40
26	11	$1\frac{3}{8}$	15 00	65	1 05	1 60	74	5	2	330 00	27 00	7 00	7 70
28	10	$1\frac{1}{2}$	17 00	80	1 20	1 75	76	5	2	375 00	30 00	7 50	8 00
30	10	$1\frac{1}{2}$	19 00	90	1 30	1 95							

*Grinding or Beveling old Saws extra.

*Setting and Sharpening Rip Saws, two-thirds price of Cross-Cut. No extra charge for Saws one gauge thicker than list.

Saws 38 inches and under beveled one gauge without extra charge.

Saws 40 inches and over beveled two gauges without extra charge.

We furnish Lathe Saws for handle turning machines, and similar work, at special prices.

Saws 48 inches in diameter and larger, thinner than ten gauge, add ten per cent. for each gauge thinner and no warrant.

Shingle Saws



SHINGLE SAWS

	Each		Each		Each
30 inches.....	\$32 00	40 inches.....	\$ 53 00	52 inches.....	\$135 00
32 inches.....	35 00	42 inches.....	65 00	54 inches.....	155 00
34 inches.....	38 00	44 inches.....	72 00	56 inches.....	175 00
36 inches.....	42 00	46 inches.....	85 00	58 inches.....	195 00
38 inches.....	47 00	48 inches.....	100 00	60 inches.....	215 00
		50 inches.....	115 00		

Shingle and Heading Saw Flanges.

New flange for the Perkins, Challoner, or Trevor Machines, fitted to new saws. List price, \$1.40 per inch in diameter.

Flanges other than above, special price.

Fitting old flange to new saw, \$2.00 each, net.

Re-Sawing or Siding Saws

GROUND TAPERING

Diam. Inches	Gauge	Price Each	Diam. Inches	Gauge	Price Each
16	---13 x 17---	\$ 7 50	28	---9 x 13---	\$20 60
16	---12 x 16---	7 75	28	---9 x 14---	21 80
16	---11 x 15---	8 00	28	---8 x 13---	22 60
18	---12 x 16---	9 30	30	---9 x 13---	22 90
18	---11 x 15---	9 60	30	---9 x 14---	24 20
18	---12 x 17---	9 90	30	---8 x 13---	25 10
20	---12 x 16---	11 10	32	---9 x 13---	26 20
20	---11 x 15---	11 45	32	---9 x 14---	27 60
20	---12 x 17---	11 80	32	---8 x 13---	28 60
22	---11 x 15---	13 40	34	---9 x 13---	29 65
22	---10 x 14---	13 85	34	---8 x 13---	31 20
22	---11 x 16---	14 20	34	---8 x 14---	32 75
24	---10 x 14---	15 70	36	---8 x 13---	34 80
24	---9 x 13---	16 25	36	---8 x 14---	36 50
24	---10 x 15---	16 60	36	---7 x 14---	39 60
26	---10 x 14---	18 15	38	---8 x 12---	36 55
26	---9 x 13---	18 80	38	---8 x 13---	38 40
26	---10 x 15---	19 20	38	---7 x 13---	42 00

Top Saws For Double Mills.

Diam. Inches	6 Gauge	7 Gauge	8 Gauge	9 Gauge	10 Gauge
24.....	\$14 20	\$13 65	\$13 10	\$12 55	\$13 00
26.....	17 10	16 45	15 80	15 15	15 00
28.....	18 40	17 60	16 80	16 00	17 00
30.....	20 70	19 80	18 90	18 00	19 00
32.....	23 00	22 00	21 00	20 00	22 00
34.....	24 90	23 70	22 50	22 50	25 00
36.....	28 30	26 90	25 50	25 50	28 00

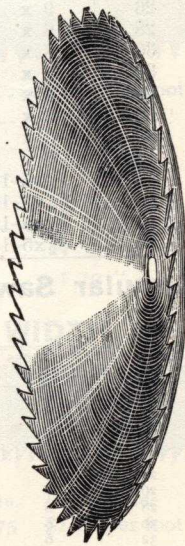
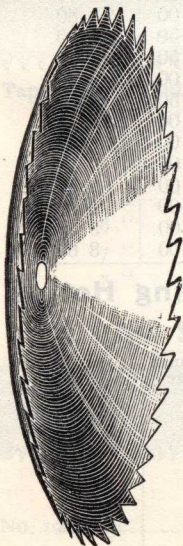
EDGER SAWS.

Gauge	12 in.	14 in.	16 in.	18 in.	20 in.	22 in.	24 in.
12.....	\$4 50	\$5 45	\$6 25	\$7 50	\$9 00	\$11 00	\$13 00
11.....	4 65	5 55	6 50	7 80	9 35	11 00	13 00
10.....	4 85	5 85	6 75	8 10	9 70	11 45	13 00
9.....	5 00	6 05	7 00	8 40	10 05	11 90	13 55
8.....	5 15	6 25	7 25	8 70	10 40	12 35	14 10

CONCAVE SAWS

Saws concaved to a smaller circle than 16 inch, extra price.

In.	Gauge		Extra each additional gauge
4	16	\$2 00	5c
6	16	2 20	5c
7	15	2 60	6c
8	15	3 10	8c
9	15	3 60	10c
10	14	4 50	13c
12	14	5 90	17c
14	13	7 20	21c
16	13	9 00	25c
18	12	10 75	30c
20	12	13 50	35c



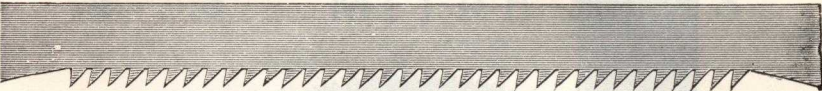
MILLING SAWS, FOR METAL.

Diameter	Gauge	Size of Hole	No. of Teeth	Price Each	Extra for each additional Gauge heavier
2	22 x 20	$\frac{1}{2}$	48	\$ 1 40	\$0 02
3	22 x 20	$\frac{1}{2}$	64	1 70	03
4	21 x 19	$\frac{3}{4}$	76	1 90	04
5	20 x 18	$\frac{3}{4}$	88	2 30	05
6	19 x 17	1	96	2 90	06
7	18 x 16	1	104	3 35	08
8	18 x 16	1	110	4 00	10
9	17 x 15	1	116	5 00	12
10	16 x 14	$1\frac{1}{4}$	120	6 25	15
12	16 x 13	$1\frac{1}{4}$	134	7 75	21
14	14 x 11	$1\frac{1}{2}$	148	10 00	26
16	13 x 10	$1\frac{1}{2}$	160	12 00	31
18	12 x 9	$1\frac{3}{4}$	172	15 00	38
20	11 x 8	$1\frac{3}{4}$	184	18 50	45
22	10 x 7	2	192	21 75	55
24	9 x 6	2	200	25 75	70
26	9 x 6	$2\frac{1}{2}$	208	31 00	80
28	8 x 5	$2\frac{1}{2}$	214	34 50	1 00
30	8 x 5	$2\frac{1}{2}$	222	38 50	1 12
32	7 x 4	$2\frac{1}{2}$	228	44 00	1 25
34	6 x 3	$2\frac{1}{2}$	232	48 50	1 50
36	6 x 3	$2\frac{1}{2}$	236	55 00	1 75
38	5 x 2	$2\frac{1}{2}$	240	61 00	2 00
40	5 x 2	$2\frac{1}{2}$	256	68 00	2 30
42	$\frac{1}{4}$ x5-16	3	260	76 00	2 60
44	$\frac{1}{4}$ x5-16	3	266	85 00	2 90
46	$\frac{1}{4}$ x5-16	3	271	95 00	3 22
48	$\frac{1}{2}$ x5-16	3	280	110 00	3 60

Circular Saws or Discs for Cutting Hot or Cold Iron.


Diameter Inches	Thickness Gauge	Price Each	Diameter Inches	Thickness Gauge	Price Each
14	10	\$ 4 00	34	5	\$18 50
16	10	5 00	36	5	20 50
18	8	6 50	38	4	24 00
20	8	7 50	40	3	29 50
22	7	9 50	42	3	35 00
24	7	10 50	44	3	41 00
26	7	12 00	46	3	50 00
28	6	13 50	48	3	60 00
30	6	15 50	50	3	70 00
32	6	17 00			

MILL SAWS.



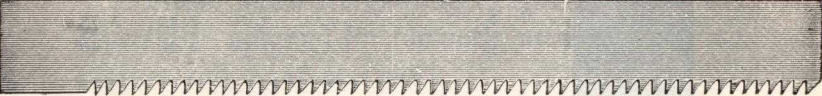
No. 5 gauge	-----	\$2 20 per foot
" 6 "	-----	2 10 " "
" 7 "	-----	1 90 " "
" 8 "	-----	1 75 " "
" 9 "	-----	1 65 " "
" 10 "	-----	1 55 " "

BUTTING OR DRAG SAWS (TAPER).

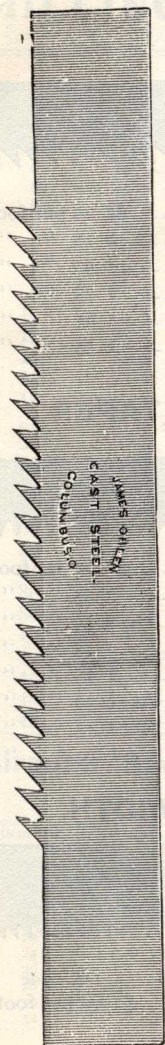


Tapered 10 in. butt, 8 in. point, No. 8 gauge	-----	\$1 60 per foot
" 10 " " 8 " " 9 "	-----	1 55 " "
" 9 " " 7 " " 8 "	-----	1 50 " "
" 9 " " 7 " " 9 "	-----	1 45 " "
" 8 " " 6 " " 10 "	-----	1 25 " "
" 8 " " 6 " " 11 "	-----	1 20 " "
" 7 " " 5 " " 10 "	-----	1 15 " "
" 7 " " 5 " " 11 "	-----	1 10 " "

DRAG SAWS OF EQUAL WIDTH.



	8 in.	9 in.	10 in.	12 in. wide
No. 10 gauge	----- \$1 45	----- \$1 55	----- \$1 75	----- \$2 00 per foot



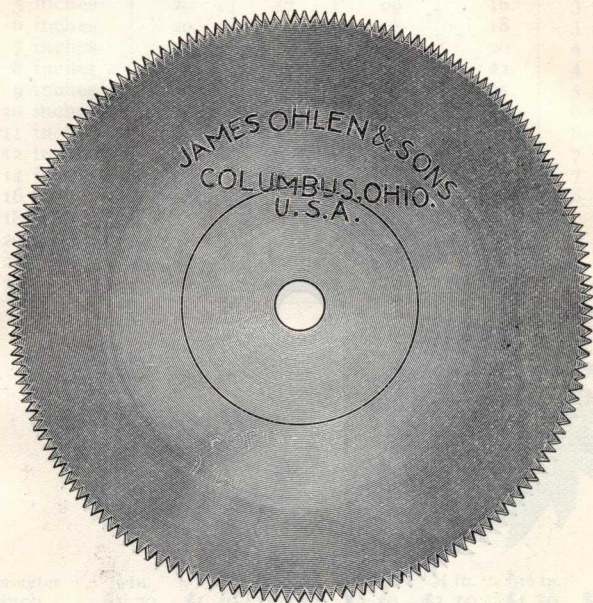
LANCE-TOOTH DRAG SAWS.

	9 in.	10 in.	12 in.	14 in. wide
No. 7 gauge	\$2 20	\$2 55	\$3 00	\$3 65 per ft
" 8 "	2 00	2 20	2 65	3 30 "
" 9 "	1 75	2 00	2 40	3 00 "
" 10 "	1 55	1 75	2 20	2 65 "

MULAY SAWS.

	Width	10 in.	11 in.	12 in.
No. 4, per foot	-----	\$3 15	\$3 50	\$3 85
" 5, " "	-----	3 00	3 30	3 50
" 6, " "	-----	2 75	3 00	3 30
" 7, " "	-----	2 40	2 75	3 00
" 8, " "	-----	2 20	2 40	2 75
" 9, " "	-----	1 90	2 20	2 40

PATENT CIRCULAR MITRE SAWS



CIRCULAR MITRE SAWS

These saws are ground to run without set; especially adapted for smooth cutting, such as cabinet and cigar box work.

When ordering, give size of hole, also diameter of collars on Mandrel.

CIRCULAR MITRE SAWS

— WITH CLEANER TOOTH —



These saws can be made for either ripping or cross cutting. When used for ripping we put in a greater number of cleaner teeth than when used for cross cutting. It will cut equally as smooth in either ripping or cross cutting.

MITRE SAW PRICE LIST.

Size	Gauge at Hole.	Gauge at Teeth	Extra for each gauge heavier than list	Extra for each additional gauge bevelling.	Price
4 inches	21	18	\$0 05	\$0 14	\$ 2 50
5 inches	20	17	09	16	3 00
6 inches	20	17	08	18	3 50
7 inches	19	16	09	20	4 25
8 inches	19	16	12	22	4 75
9 inches	18	15	15	25	5 50
10 inches	18	15	18	28	6 00
11 inches	17	14	21	30	6 50
12 inches	17	14	25	35	7 00
14 inches	16	13	32	40	7 75
16 inches	16	13	38	50	8 75
18 inches	15	12	45	60	10 25
20 inches	15	12	53	70	12 25
22 inches	14	11	68	80	15 00
24 inches	14	11	83	90	18 00

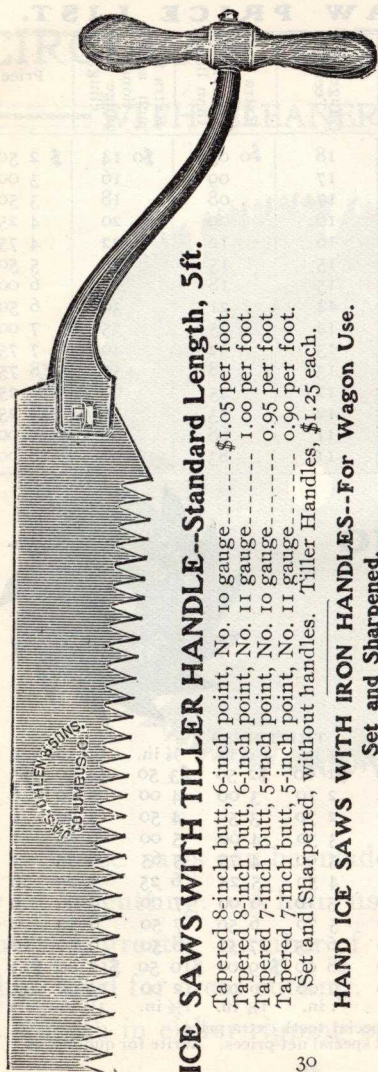
GROOVING SAWS



Diameter	THICKNESS							
	1/8 in.	3-16 in.	1/4 in.	5-16 in.	3/8 in.	7-16 in.	1/2 in.	
4 inch-----	\$1 20	\$1 40	\$1 60	\$2 50	\$3 50	\$4 50	\$5 50	
5 inch-----	1 55	1 75	2 10	3 00	4 00	5 00	6 00	
6 inch-----	1 90	2 20	2 70	3 50	4 50	5 50	6 50	
7 inch-----	2 30	2 70	3 30	4 00	5 00	6 00	7 00	
8 inch-----	2 70	3 20	3 90	4 75	5 65	6 75	7 75	
9 inch-----	3 30	3 75	4 50	5 25	6 25	7 25	8 25	
10 inch-----	3 90	4 50	5 10	6 00	7 00	8 00	9 00	
11 inch-----	4 50	5 10	5 70	6 50	7 50	8 50	9 05	
12 inch-----	5 10	5 70	6 25	7 50	8 50	9 50	10 50	
14 inch-----	\$6 00	\$7 00	\$8 00	\$ 9 00	\$10 50	\$12 00	\$13 50	
16 inch-----	7 00	8 00	9 00	10 00	12 00	14 00	15 00	
SPACE TEETH	1/2 in.	1 in.	1 in.	1 1/4 in.	1 1/2 in.	1 3/4 in.	2 in.	

Saws with less space or special teeth extra price.

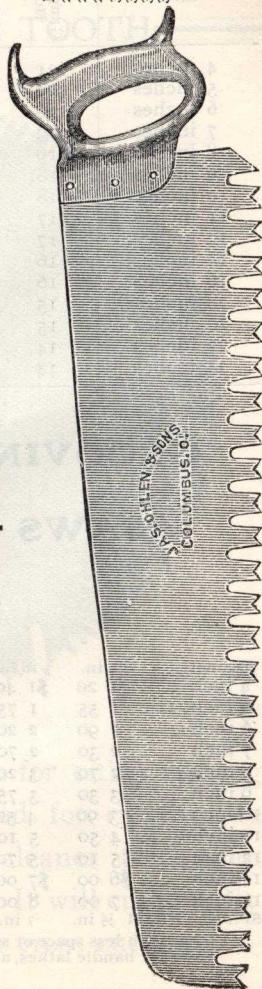
Saws for handle lathes, at special net prices. Write for quotations.



ICE SAWS WITH TILLER HANDLE--Standard Length, 5ft.

Tapered 8-inch butt, 6-inch point, No. 10 gauge-----\$1.05 per foot.
 Tapered 8-inch butt, 6-inch point, No. 11 gauge----- 1.00 per foot.
 Tapered 7-inch butt, 5-inch point, No. 10 gauge----- 0.95 per foot.
 Tapered 7-inch butt, 5-inch point, No. 11 gauge----- 0.90 per foot.
 Set and Sharpened, without handles. Tiller Handles, \$1.25 each.

HAND ICE SAWS WITH IRON HANDLES--For Wagon Use. Set and Sharpened.



In.	Doz.	Per
24---	\$22.00	
26---	23.00	
28---	24.00	
30---	25.00	
32---	27.00	
34---	30.00	
36---	32.00	
With		
Beech		
Handles		
same		
price.		

BAND RE-SAWS.

These saws, owing to trouble experienced in running and difficulty in procuring material for making them, are only WARRANTED when left entirely to the judgment of the maker as regards thickness, teeth, temper, etc., or how they shall be made, and in no instance will this rule be departed from. When ordering specify for what work they are intended and on what machine they are to be used.

THICKNESS

1 $\frac{1}{8}$ in. wide, 19 or 20 gauge	25c per foot.
1 $\frac{1}{4}$ " " " "	25c " "
1 $\frac{3}{8}$ " " " "	28c " "
1 $\frac{1}{2}$ " " " "	32c " "
1 $\frac{3}{4}$ " " " "	50c " "
2 " " " "	60c " "
2 $\frac{1}{4}$ " 18, 19 or 20 "	75c " "
2 $\frac{1}{2}$ " " " "	85c " "
3 " 18 or 19 "	\$1.05 " "
4 " " "	1.45 " "
4 $\frac{1}{2}$ " " "	1.65 " "
5 " " "	2.00 " "
6 " " "	2.50 " "

Setting, filing and joining, all sizes to 2 in., inclusive, 75c per saw. From 2 in. to 4 in., \$1.50 per saw. From 4 in. to 6 in., \$2.00 per saw.

Joining only will be one-third of above prices, and if only set and filed will be two-thirds of above prices.

REDUCED PRICE LIST.

Superseding all Former Price Lists.

WARRANTED BAND SAWS.

Made in any length, to 500 feet long, not set, filed or joined.

1 $\frac{1}{8}$ —3-16 and 1 $\frac{1}{4}$ in. wide, 22 gauge	8c per foot.
5-16 and 3 $\frac{1}{8}$ in. wide, 21-22 "	9c " "
1 $\frac{1}{2}$ in. wide 20-21 "	10c " "
5 $\frac{1}{8}$ " 20-21 "	12c " "
3 $\frac{1}{4}$ " 20 "	14c " "
7 $\frac{1}{8}$ " 20 "	16c " "
1 " 20 "	17c " "

Setting, filing and joining will be charged extra, at the rate of 65c per saw.

Joining only, 35c per saw.

Setting and filing only, 2c per foot.

Thin or Bevel Back Saws, extra.

Silver Solder, \$1.00 oz.

REPAIRING CIRCULAR SAWS.

Does not matter whose make of Saws, we repair them with all the skill possible. Send your Saws to us to Hammer. The work is fully guaranteed.

When we gum saws, we grind teeth free. All repairs warranted to give satisfaction. Breaking in re-toothed at owner's risk.

Diameter in inches.	Hammering only.	Gumming and Hammering.	Cutting Down, Re-Toothed and Hammering.	Grinding each Gauge.
4.....	\$ 0 25	\$ 0 32	\$ 0 40	\$ 0 10
5.....	30	40	50	15
6.....	35	48	60	20
7.....	40	56	70	30
8.....	50	64	80	35
9.....	55	72	90	40
10.....	60	80	1 00	45
12.....	65	96	1 20	50
14.....	75	1 12	1 50	60
16.....	90	1 30	1 60	70
18.....	1 00	1 45	1 80	80
20.....	1 10	1 60	2 00	90
22.....	1 50	2 20	2 75	1 00
24.....	1 60	2 40	3 00	1 20
26.....	1 75	2 60	3 25	1 40
28.....	1 90	2 80	3 50	1 60
30.....	2 00	3 00	3 75	1 80
32.....	2 55	3 85	4 80	2 00
34.....	2 75	4 10	5 10	2 20
36.....	2 90	4 30	5 40	2 40
38.....	3 05	4 55	5 70	2 60
40.....	3 20	4 80	6 00	3 00
42.....	4 20	6 30	7 85	3 50
44.....	4 40	6 60	8 25	3 70
46.....	4 60	6 90	8 65	3 80
48.....	4 80	7 20	9 00	4 00
50.....	5 00	7 50	9 35	4 20
52.....	6 95	10 40	13 00	4 30
54.....	7 20	10 80	13 50	4 50
56.....	7 50	11 20	14 00	4 70
58.....	7 75	11 60	14 50	4 80
60.....	8 00	12 00	15 00	5 00
62.....	10 35	15 50	19 35	5 20
64.....	10 70	16 00	20 00	5 40
66.....	11 00	16 50	20 60	5 50
68.....	11 35	17 50	21 25	5 70
70.....	11 65	18 00	21 85	5 90
72.....	12 00	20 60	22 50	6 00

Mark Your Name and Ours Plainly on Saw Case Before Shipment.

BURNT SAWS.

Mark your name on saw case when you ship.

The temper of burnt saws can generally be restored by re-tempering. We make a specialty of this class of work and rarely fail to make such saws as good as new. We undertake the work at owner's risk, though no charge will be made by us in case of failure.

Please prepay freight on all such saws.

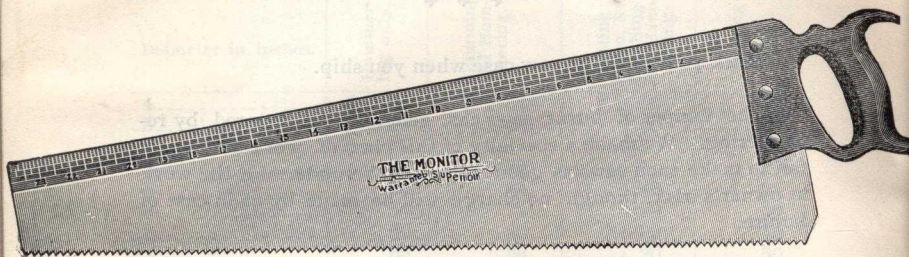
Size.	Price.
30 inches	\$ 6 00
32 inches	7 00
34 inches	8 00
36 inches	8 50
38 inches	9 00
40 inches	9 50
42 inches	10 50
44 inches	12 00
46 inches	13 50
48 inches	15 00
50 inches	17 50
52 inches	20 00
54 inches	22 50
56 inches	25 00
58 inches	27 50
60 inches	30 00
62 inches	34 00
64 inches	38 00
66 inches	44 00
68 inches	50 00
70 inches	58 00

All sizes under 30 inches, 1-3 list price for Circular Saws.

Above Prices Include Retempering, Gumming and Grinding.

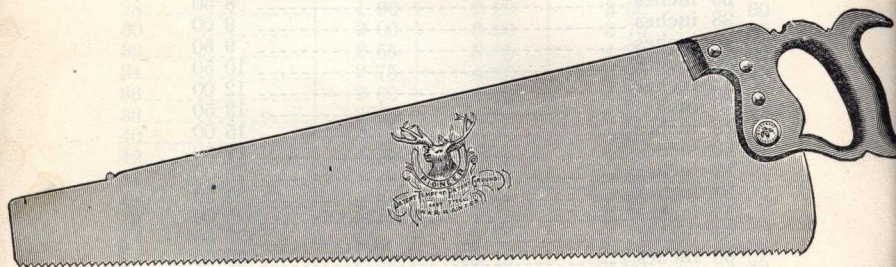
H A N D - S A W S

PATENT GROUND AND TEMPERED



No. 103. THE MONITOR. Fine cast steel, straight back, polished blade, Patent ground, even temper. 24-inch rule etched on the 26-inch saws, 18-inch rule etched on the 20-inch saws. Beechwood handle, polished edges, three improved saw screws. Etched to order.

Inches.....	20	26
Per dozen.....	\$7 00	\$8 00

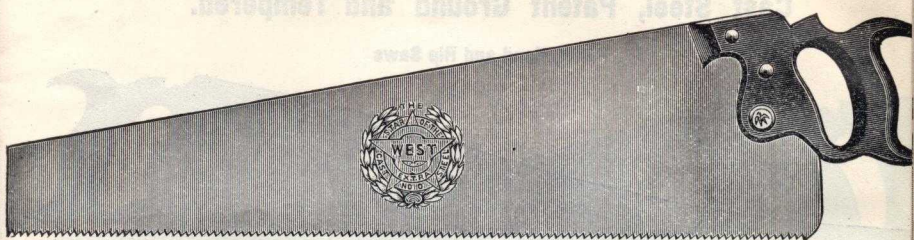


Cast Steel, Patent Temper and Patent Ground.

No. 111. PIONEER. Fine cast steel, straight back, finely polished blade, patent ground, perfect temper, filed and set ready for use. Beechwood handle, polished edges, four improved brass screws. Etched to order.

Inches.....	14	16	18	20	22	24	26	28
Price.....	\$7 00	\$7 50	\$8 00	\$8 50	\$9 00	\$9 50	\$10 00	\$11 50

The above in one-half dozen boxes.



Patent Ground and Tempered

No. 101. STAR OF THE WEST. Fine cast steel, straight back, polished, strong, even temper, Blade patent ground, Beechwood handle, polished edges, three improved screws. Etched to order. Inches—Price per doz.

12	14	16	18	20	22	24	26	28	30
\$4 30	\$4 70	\$5 10	\$5 50	\$5 90	\$6 35	\$6 90	\$7 40	\$9 00	\$10 50

Above in one-half dozen boxes.



Cast Steel, Patent Ground and Tempered

No. 104. EAGLE. Fine cast steel, straight back, polished blade, patent ground, even temper, filed and set ready for use. Walnut handle with polished steel plate, three improved saw screws. Etched to order.

Inches...	16	18	20	22	24	26	28	30
	\$6 50	\$7 00	\$7 50	\$8 00	\$8 50	\$9 00	\$9 50	\$12 00

The above in one-half dozen boxes.

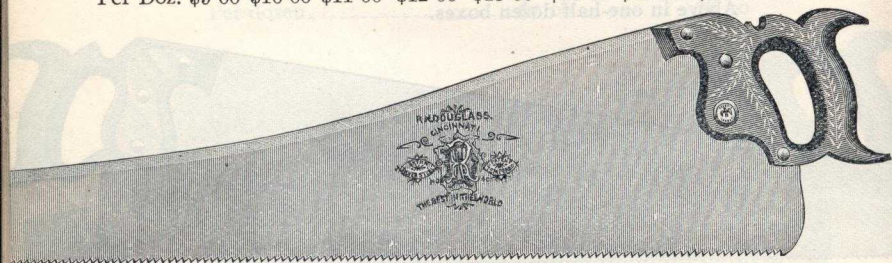
Cast Steel, Patent Ground and Tempered.

Panel, Hand and Rip Saws



No. 108. NECK AND NECK. Fine cast steel, full skew back, highly polished blade. Hand filed and set ready for use. Beechwood handle, polished edge, four improved screws. Has no equal in the respective grade. Perfect temper. Etched to order.

Inches---	16	18	20	22	24	26	28	30
Per Doz.	\$9 00	\$10 00	\$11 00	\$12 00	\$13 00	\$14 00	\$16 00	\$19 00



HAND MADE HAND SAWS

No. 40. R. N. DOUGLAS. Hand-made Hand Saws for mechanics. Refined American cast steel, highly polished, full skew back blade, full taper ground, hand filed and set ready for use. Applewood or cherrywood handle, highly finished and carved, with four brass screws. Hangs light and easy. This saw excels all others in its respective grade. Etched to order. Warranted. Made also in straight back, same price.

Inches ---	16	18	20	22	24	26	28
Per doz.	\$13 00	\$14 00	\$15 00	\$16 00	\$17 00	\$18 00	\$20 00



Warranted Cast Steel, Patent Ground and Tempered. Panel and Rip.

No. 109. DEARBORN. Fine cast steel, full skew back, full width blade, highly polished, perfect temper. Hand filed and set ready for use. Beechwood handle, polished edges, with four improved brass screws. Etched to order.

Inches-----	16	18	20	22	24	26	28
Per doz.	\$11 50	\$12 50	\$13 50	\$14 50	\$15 00	\$16 00	\$18 00



Cast Steel, Patent Temper, Patent Ground.

No. 110. ORIOLE. Fine cast steel, skew back, finely polished blade, patent ground, perfect temper, filed and set ready for use. Beechwood handle, polished edges, four improved brass saw screws. Etched to order.

Inches-----	14	16	18	20	22	24	26	28
Per doz.	\$7 50	\$8 00	\$8 50	\$9 00	\$9 50	\$10 00	\$11 00	\$12 00

FELLOE WEBS.

6 inch 19 gauge	-----	\$1 30	per doz.		
7 " 19 "	-----	1 35	"		
8 " 19 "	-----	1 45	"		
10 " 18 "	-----	1 60	"		
12 " 18 "	-----	1 85	"		
14 " 17 "	-----	2 10	"		
16 " 17 "	-----	2 35	"		
18 " 17 "	-----	2 70	"		
20 " 17 "	-----	3 00	"		
22 " 17 "	-----	3 30	"		
24 " 17 "	-----	3 65	"		
26 " 17 "	-----	4 00	"		
28 " 17 "	-----	4 40	"		
30 " 16 "	-----	4 80	"		
32 " 16 "	-----	5 20	"		
34 " 16 "	-----	5 60	"		
36 " 16 "	-----	6 00	"		

3-16 to $\frac{1}{2}$ in. wide

3-16 to $\frac{5}{8}$ in. wide

$\frac{1}{4}$ to $\frac{3}{4}$ in. wide

$\frac{1}{4}$ to $\frac{3}{4}$ " "

$\frac{1}{4}$ to $\frac{7}{8}$ " "

$\frac{1}{4}$ to $\frac{7}{8}$ " "

$\frac{1}{4}$ to 1 " "

$\frac{1}{4}$ to 1 " "

$\frac{1}{4}$ to 1 " "

$\frac{1}{4}$ to 1 " "

1 gauge heavier than the above list, no extra charge; 5 per cent. extra for each additional gauge to 14 gauge; above 14 gauge, special price. Extra width 10 per cent. for each $\frac{1}{8}$ in.

FAY'S SCROLL SAWS.

Inches	8	9	10	11	12	13	14
Per doz.	\$1 75	2 00	2 25	2 50	2 75	3 00	3 25
Inches			16	18	20	22	24
Per doz			\$3 50	4 00	4 50	5 00	5 50

CHAIR AND TURNING WEBS.

6 inch 23 gauge	-----	\$1 20	per doz.		
7 " 22 "	-----	1 25	"		
8 " 22 "	-----	1 30	"		
10 " 22 "	-----	1 35	"		
12 " 21 "	-----	1 45	"		
14 " 21 "	-----	1 60	"		
16 " 20 "	-----	1 80	"		
18 " 20 "	-----	2 00	"		
20 " 20 "	-----	2 25	"		
22 " 20 "	-----	2 50	"		
24 " 19 "	-----	2 80	"		
26 " 19 "	-----	3 10	"		
28 " 19 "	-----	3 45	"		
30 " 19 "	-----	3 80	"		

3-16 to $\frac{1}{4}$ in. wide

3-16 to 5-16 in. wide

3-16 to $\frac{3}{8}$ in. wide

3-16 to $\frac{1}{2}$ " "

3-16 to $\frac{5}{8}$ " "

$\frac{1}{4}$ to $\frac{5}{8}$ " "

$\frac{1}{4}$ to $\frac{3}{4}$ " "

$\frac{1}{4}$ to $\frac{3}{4}$ " "

$\frac{1}{4}$ to 1 " "

32 inch 18 gauge,-----\$4 20 per doz. $\frac{1}{4}$ to 1 in. wide

34 " 18 "-----4 60 " $\frac{1}{4}$ to 1 " "

36 " 18 "-----5 00 " $\frac{1}{4}$ to 1 " "

OHLEN'S CHAMPION TOOTH.

JAMES OHLEN
COLUMBIEN

Feet-----4	4½	5	5½	6	6½	7	7½	8
Price each--\$1 44	\$1 62	\$1 80	\$1 98	\$2 16	\$2 34	\$2 52	\$2 70	\$2 88

Ohlen's Diamond Tooth.

Feet-----4	4½	5	5½	6	6½	7	7½	8
Price each--\$1 52	\$1 71	\$1 90	\$2 09	\$2 28	\$2 47	\$2 66	\$2 85	\$3 04

Ohlen's American Tooth.

Feet-----4	4½	5	5½	6	6½	7	7½	8
Price each--\$1 52	\$1 71	\$1 90	\$2 09	\$2 28	\$2 47	\$2 66	\$2 85	\$3 04

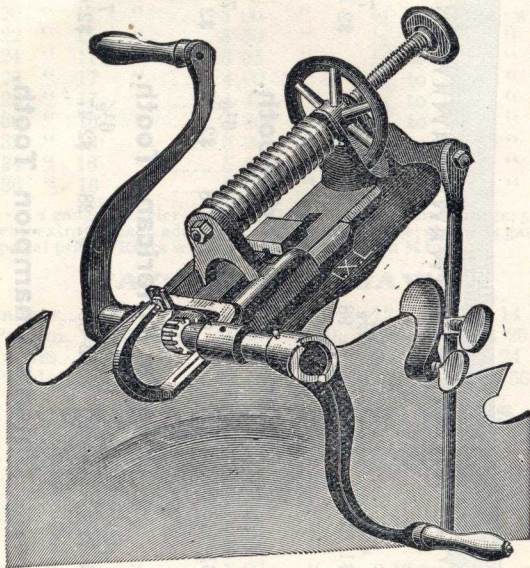
Ohlen's Champion Tooth.

Feet-----3	3½	4	4½	5	5½	6
Price each--\$2 25	\$2 60	\$3 00	\$3 35	\$3 70	\$4 10	\$4 45

OHLEN'S "I X L" SAW GUMMER

Has a Changeable Self-Feed

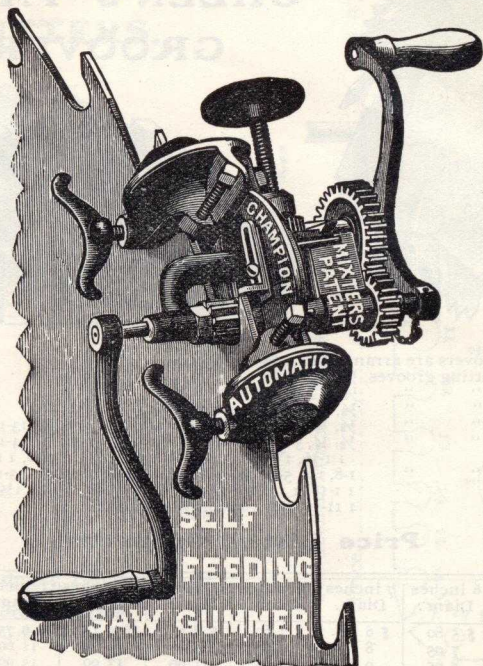
but is not automatic. It is pronounced first-class by those using it, and we sell it as such. It is designed especially as a low-priced Gummer, is strong and will do its work thoroughly.



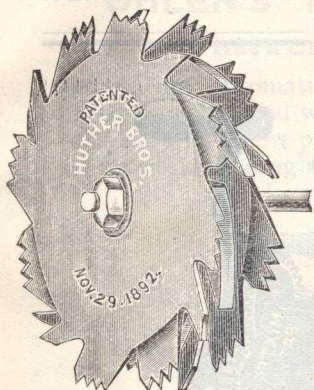
WARRANTED

The "I X L," Saw Gummer complete, with three Arbors, two cranks and wrench, with three Solid Cutters, any size on list, and one Cutter Grinder \$15.00
 The "I X L," Saw Gummer complete, with three Arbors, two cranks and wrench, with one Inserted Tooth Cutter any size on list, and fifty (50) Teeth \$15.00

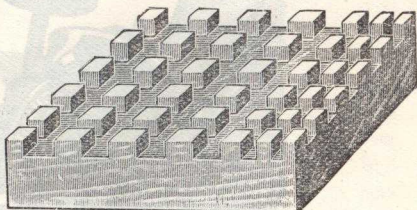
OHLEN'S MIXTER'S CELEBRATED CHAMPION GUMMER



The Mixer Patent Automatic Self-Feeding Champion Gummer including three cutters (usual size, $\frac{3}{4}$, $\frac{7}{8}$ and 1 inch) grinder and wrench.....	\$25.00
Small size Patent Automatic Self-Feeding Champion Gummer, especially adapted for cross-cut saws and small and medium circular saws, including three cutters ($\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ inch) grinder and wrench.....	20.00
Extra arbors for $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ inch cutter for Mixer's Champion Gummer.....	2.00
Extra arbor for $\frac{3}{8}$ inch cutter for small size Mixer's Champion Gummers.....	1.50



OHLEN'S PATENT GROOVERS.



The Groovers are arranged in sets, as follows:

- No. 1 Set, cutting grooves, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$.
 No. 2 " " " $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$.
 No. 3 " " " $\frac{1}{8}$, $\frac{1}{4}$, 5-16, $\frac{3}{8}$, 7-16, $\frac{1}{2}$, 9-16, $\frac{5}{8}$, 11-16, $\frac{3}{4}$.
 No. 4 " " " $\frac{1}{8}$, $\frac{1}{4}$, 5-16, $\frac{3}{8}$, 7-16, $\frac{1}{2}$, 9-16, $\frac{5}{8}$, 11-16, $\frac{3}{4}$, 13-16, $\frac{7}{8}$, 15-16, 1.
 No. 5 " " " $\frac{1}{8}$, $\frac{1}{4}$, 5-16, $\frac{3}{8}$, 7-16, $\frac{1}{2}$, 9-16, $\frac{5}{8}$, 11-16, $\frac{3}{4}$, 13-16, $\frac{7}{8}$, 15-16, 1,
 1 1-16, 1 $\frac{1}{8}$, 1 3-16, 1 $\frac{1}{4}$, 1 5-16, 1 $\frac{3}{8}$, 1 7-16, 1 1-2.
 No. 6 " " " 1-8, 1-4, 5-16, $\frac{3}{8}$, 7-16, $\frac{1}{2}$, 9-16, $\frac{5}{8}$, 11-16, $\frac{3}{4}$, 13-16, $\frac{7}{8}$, 15-16, 1,
 1 1-16, 1 1-8, 1 3-16, 1 $\frac{1}{4}$, 1 5-16, 1 $\frac{3}{8}$, 1 7-16, 1 $\frac{1}{2}$, 1 9-16, 1 $\frac{5}{8}$,
 1 11-16, 1 $\frac{3}{4}$, 1 13-16, 1 $\frac{7}{8}$, 1 15-16, 2.

Price List of Groovers.

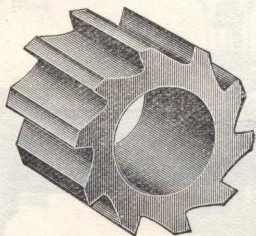
	6 inches Diam.	7 inches Diam.	8 inches Diam.	9 inches Diam.	10 inches Diam.	11 inches Diam.	12 inches Diam.
No. 1 Set --	\$ 5 80	\$ 6 80	\$ 7 60	\$ 8 35	\$ 9 15	\$ 9 75	\$10 85
No. 2 Set --	7 05	8 15	9 05	9 90	10 80	11 60	12 95
No. 3 Set --	8 65	9 85	10 85	11 90	13 00	13 90	15 45
No. 4 Set --	9 90	11 20	12 30	13 45	14 65	15 75	17 55
No. 5 Set --	12 40	13 90	15 20	16 55	17 95	19 45	21 75
No. 6 Set --	14 90	16 60	18 10	19 65	21 25	23 15	25 95

	14 in. Diam.	16 in. Diam.	18 in. Diam.	20 in. Diam.			
No. 1 Set --	\$13 00	\$15 80	\$18 30	\$19 80	-----	-----	-----
No. 2 Set --	15 40	17 90	20 40	22 90	-----	-----	-----
No. 3 Set --	18 00	20 50	23 00	25 50	-----	-----	-----
No. 4 Set --	20 00	22 50	25 00	27 50	-----	-----	-----
No. 5 Set --	24 25	26 75	29 25	31 75	-----	-----	-----
No. 6 Set --	28 50	31 00	33 50	36 00	-----	-----	-----

In ordering please state the number of set, diameter of groove, and size of hole wanted.

Extra inside cutters can be had at any time.

MIXTER'S XX CUTTERS.



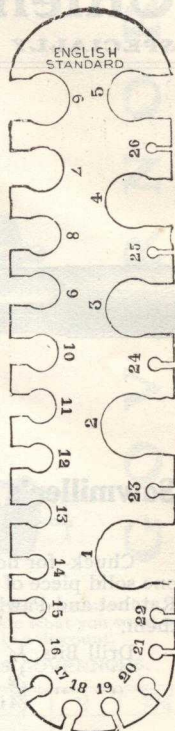
1 3/4 inch	-----	\$1 75
1 1/2 inch	-----	1 25
1 1/4 inch	-----	1 00
1 1/8 inch	-----	90
1 inch	-----	80
7/8 inch	-----	70
3/4 inch	-----	60
5/8 inch	-----	50
1/2 inch	-----	50
3/8 inch	-----	50

We can supply cutters for any
Gummers made.

SAW GAUGE.

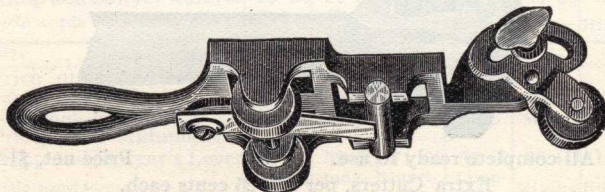
For determining thickness of saw.

Price.....\$1 30



MIXTER'S CUTTER GRINDER

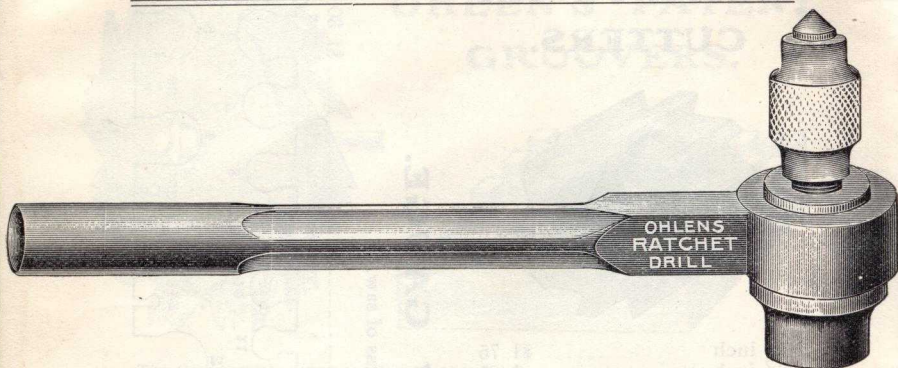
PRICE, \$2.00.



We give a Grinder free with each Gummer.

Ohlen's Ratchet Drill

SPECIALLY ADAPTED FOR SAW MILL USE



Sawmiller's Favorite.

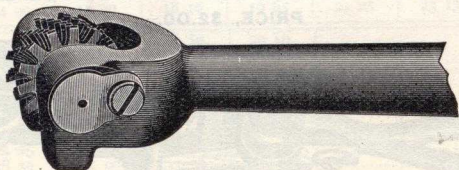
PRICE, \$4.75.

One usage will pay for drill.

Chuck for holding drill bit, ratchet and screw is made from one solid piece of steel. Handle made from best malleable iron. Ratchet and Pawl are enclosed, preventing dust accumulating on them.

Drill Bits, $\frac{1}{4}$ to $\frac{3}{8}$,	-----	35 cents each.
" " $\frac{1}{2}$ to $\frac{5}{8}$,	-----	40 " "
" " $\frac{3}{4}$,	-----	45 " "
Extra length, 5 cents per inch.		

Ohlen's Emery Wheel Dresser.

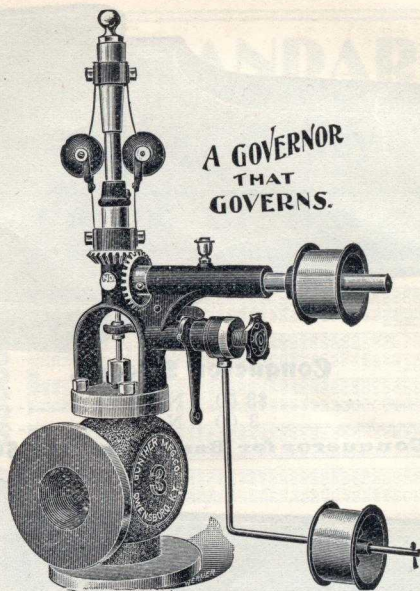


All complete ready to use.

Price net, \$1.25.

Extra Cutters, per set, 25 cents each.

O H L E N ' S

A GOVERNOR
THAT
GOVERNS.

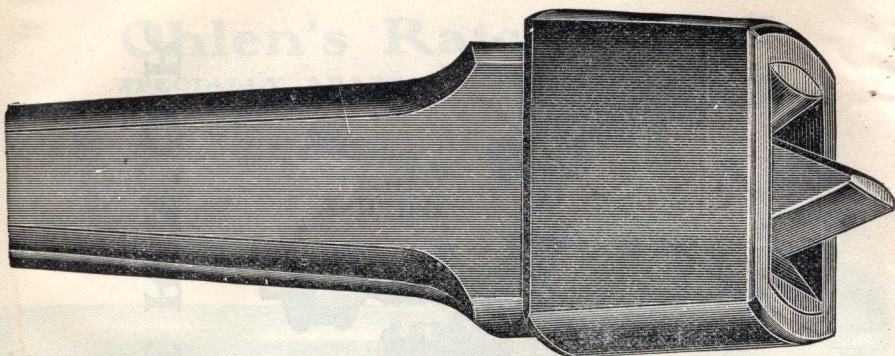
GOVERNOR

THE OHLEN GOVERNOR.

We handle a thoroughly reliable Governor and guarantee satisfaction. It will fit any engine. Can ship promptly. Write and state what you want and we will name net prices. Following prices are subject to a discount.

PRICE LIST AND CODE WORDS OF OHLEN'S GOVERNORS.

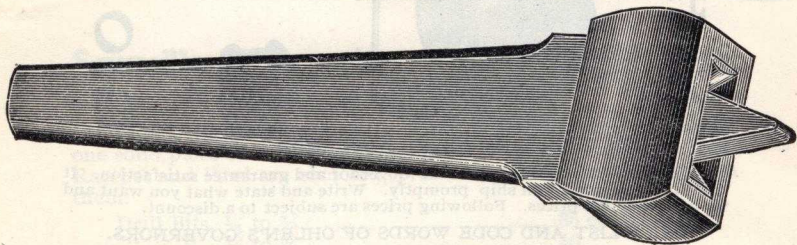
Size	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$
Price, plain, with Sawyer's Lever	\$16 00	18 00	21 00	25 00	30 00	35 00
Code words for above	Come	Dig	Earn	File	Glue	Hunt
Price with Automatic Stop and Sawyer's Lever	19 00	21 00	24 50	29 50	36 00	42 00
Code words for above	Coming	Digging	Earning	Filing	Gluing	Hinting
Size	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
Price, plain, with Sawyer's Lever	\$40 00	50 00	60 00	71 00	83 00	94 00
Code words for above	Ignore	Judge	Knurl	Limp	Mix	Nurse
Price, with Automatic Stop and Sawyer's Lever	48 00	59 00	71 00	83 00	96 00	109 00
Code words for above	Ignoring	Judging	Knurling	Limping	Mixing	Nursing



Conqueror Swedge.

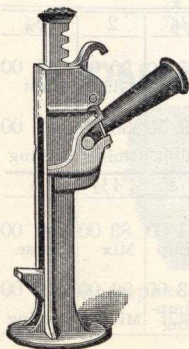
No. 0.....	\$3 50	No. 2.....	\$2 80
No. 1.....	3 00	No. 3.....	2 00

Conqueror for Band Saws, \$2.50.



Mixer Swedge.

No. 0.....	\$4.00
No. 1.....	5.00
No. 2.....	6.00
No. 3.....	7.00



Ohlen's Lever Jack.

Capacity, 4 tons. Weight, 28 lbs. Height, with bar down, 17 inches. Rise of bar, 10 inches. Made of malleable iron or steel. Just the thing for saw mill or thresher use.

Price Only \$5.00.



OHLEN STANDARD

Wood Split Pulley

0000 PRICE LIST 0000

Diam. Inches.	WIDTH OF FACE, IN INCHES.																WRITE FOR DISCOUNT			
	3	4	5	6	7	8	9	10	12	14	16	18	20	22	24					
10	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	10.40	11.20	12.00	12.80	13.60
11	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	11.00	11.80	12.60	13.40	14.20
12	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	11.60	12.40	13.20	14.00	14.80
13	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	12.20	13.00	13.80	14.60	15.40
14	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	12.80	13.60	14.40	15.20	16.00
15	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	13.40	14.20	15.00	15.80	16.60
16	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	14.00	14.80	15.60	16.40	17.20
17	2.60	2.70	2.80	3.00	3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	14.60	15.40	16.20	17.00	17.80
18	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	15.20	16.00	16.80	17.60	18.40
19	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	15.80	16.60	17.40	18.20	19.00
20	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	16.40	17.20	18.00	18.80	19.60
21	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	17.00	17.80	18.60	19.40	20.20
22	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	17.60	18.40	19.20	20.00	20.80
23	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	18.20	19.00	19.80	20.60	21.40
24	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	18.80	19.60	20.40	21.20	22.00
25	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	19.40	20.20	21.00	21.80	22.60
26	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	20.00	20.80	21.60	22.40	23.20
27	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	20.60	21.40	22.20	23.00	23.80
28	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	21.20	22.00	22.80	23.60	24.40
29	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	21.80	22.60	23.40	24.20	25.00
30	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	22.40	23.20	24.00	24.80	25.60
31	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	23.00	23.80	24.60	25.40	26.20
32	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	23.60	24.40	25.20	26.00	26.80
33	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	24.20	25.00	25.80	26.60	27.40
34	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	24.80	25.60	26.40	27.20	28.00
35	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	25.40	26.20	27.00	27.80	28.60
36	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	26.00	26.80	27.60	28.40	29.20
37	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	26.60	27.40	28.20	29.00	29.80
38	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	27.20	28.00	28.80	29.60	30.40
39	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	27.80	28.60	29.40	30.20	31.00
40	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	28.40	29.20	30.00	30.80	31.60
41	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	29.00	29.80	30.60	31.40	32.20
42	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	29.60	30.40	31.20	32.00	32.80
43	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	30.20	31.00	31.80	32.60	33.40
44	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	30.80	31.60	32.40	33.20	34.00
45	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	31.40	32.20	33.00	33.80	34.60
46	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	32.00	32.80	33.60	34.40	35.20
47	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	32.60	33.40	34.20	35.00	35.80
48	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	33.20	34.00	34.80	35.60	36.40
49	5.80	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	33.80	34.60	35.40	36.20	37.00
50	5.90	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	34.40	35.20	36.00	36.80	37.60
51	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	35.00	35.80	36.60	37.40	38.20
52	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	35.60	36.40	37.20	38.00	38.80
53	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	36.20	37.00	37.80	38.60	39.40
54	6.30	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	36.80	37.60	38.40	39.20	40.00
55	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	37.40	38.20	39.00	39.80	40.60
56	6.50	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	38.00	38.80	39.60	40.40	41.20
57	6.60	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	38.60	39.40	40.20	41.00	41.80
58	6.70	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	39.20	40.00	40.80	41.60	42.40
59	6.80	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	39.80	40.60	41.40	42.20	43.00
60	6.90	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	40.40	41.20	42.00	42.80	43.60
61	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	41.00	41.80	42.60	43.40	44.20
62	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	41.60	42.40	43.20	44.00	44.80
63	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	8.60	42.20	43.00	43.80	44.60	45.40
64	7.30	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	42.80	43.60	44.40	45.20	46.00
65	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	43.40	44.20	45.00	45.80	46.60
66	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	44.00	44.80	45.60	46.40	47.20
67	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	9.00	44.60	45.40	46.20	47.00	47.80
68	7.70	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	9.00	9.10	45.20	46.00	46.80	47.60	48.40
69	7.80	7.90	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	9.00	9.1						

IRON PULLEYS

**Bored, Turned and Balanced with
Set Screws or Key Seat**  

In ordering Pulleys, be careful to give EXACT size of the shaft they are to go on; also state if they are wanted with STRAIGHT FACE for shifting belt, or ROUNDING FACE for non-shifting belt.

Diameter in Inches	Width face in inches	Price	Diameter in Inches	Width face in Inches	Price	Diameter in Inches	Width face in Inches	Price	Diameter in Inches	Width face in Inches	Price	Diameter in Inches	Width face in Inches	Price
6	3	\$1 20	12	5	\$2 90	16	16	\$ 9 70	26	4	\$ 5 75	34	6	\$11 20
	4	1 45		6	3 30					5	6 70		8	14 00
	5	1 70		8	4 20	18	3	3 00		6	7 70		10	16 80
	6	1 90		10	5 05		4	3 60		8	9 60		12	19 50
				12	5 90		5	4 20		10	11 50		14	22 40
7	3	1 35		14	6 70		6	4 80		12	13 45		16	25 20
	4	1 75					8	6 00		14	15 50		18	28 00
	5	1 88	13	3	2 25		10	7 20		16	17 25		20	30 75
	6	2 15		4	2 70		12	8 40		18	19 20			
				5	3 15		14	9 60				36	5	10 65
8	3	1 50		6	3 60		16	10 80	28	4	6 40		6	11 15
	4	1 80		8	4 50					5	7 40		8	15 20
	5	2 10		10	5 40	20	4	3 95		6	8 45		10	18 25
	6	2 40		12	6 30		5	4 60		8	10 60		12	21 25
	8	3 00		14	7 20		6	5 30		10	12 70		14	24 50
	10	3 60					8	6 60		12	13 90		16	27 35
			14	3	2 40		10	7 70		14	17 00		18	30 35
9	3	1 65		4	2 95		12	9 25		16	19 00		20	33 45
	4	2 00		5	3 36		14	10 55		18	20 55			
	5	2 30		6	3 85		16	11 90				38	6	12 00
	6	2 65		8	4 80		18	12 20	30	4	6 95		8	16 40
	8	3 30		10	5 15					5	8 10		10	20 10
	10	3 95		12	6 70	22	4	4 55		6	9 25		12	22 90
				14	7 68		5	5 30		8	11 60		14	26 25
10	3	1 80					6	6 07		10	13 90		16	29 00
	4	2 15	15	3	2 55		8	7 60		12	16 20		18	32 85
	5	2 52		4	3 05		10	9 10		14	18 55		20	36 05
	6	2 95		5	3 58		12	10 65		16	20 90			
	8	3 60		6	4 10		14	12 15		18	23 20	40	6	14 05
	10	4 30		8	5 10		16	13 70		20	25 60		8	17 60
	12	5 05		10	6 10		18	15 20					10	21 10
				12	7 15				32	5	8 96		12	24 60
11	3	2 00		14	8 15	24	4	5 20		6	10 25		14	28 15
	4	2 35					5	6 05		8	12 80		16	31 70
	5	2 73		3	2 70		6	6 85		10	15 35		18	35 20
	6	3 10	16	4	3 25		8	8 60		12	18 00		20	38 75
	8	3 90		5	3 84		10	10 30		14	20 45			
	10	4 70		6	4 30		12	12 00		16	23 05	42	6	15 05
	12	5 45		8	5 40		14	13 70		18	25 60		8	19 55
				10	6 50		16	15 50		20	28 15		10	23 45
12	3	2 10		12	7 55		18	17 30					12	27 80
	4	2 52		14	8 65				34	5	9 80			

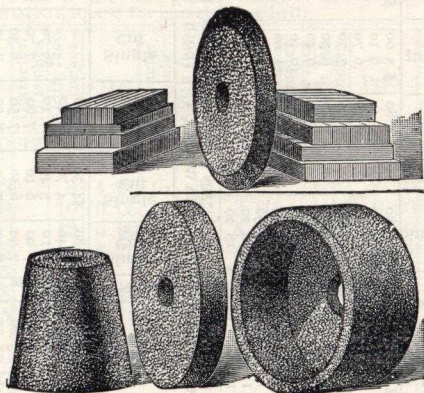
FILES AND RASPS—BEST QUALITY CAST STEEL.

PRICE PER DOZEN.

MILL AND ROUND				FLAT			SQUARE				HAND AND PILLAR				H.F. RD. & THREE SQ								
INCH	2nd Cut		Smooth	Bastard	2nd Cut	Smooth	INCH	Bastard	2nd Cut	Smooth	INCH	Bastard	2nd Cut	Smooth	INCH	Bastard	2nd Cut	Smooth					
	Bastard	2nd Cut	Smooth																Bastard	2nd Cut	Smooth	Bastard	2nd Cut
4	\$3 00	\$3 50	\$3 90	\$3 70	\$4 30	\$4 70	4	\$3 00	\$4 60	\$4 90	\$4 30	\$3 70	\$4 30	\$4 80	4	\$4 80	\$5 60	\$6 10					
5	3 20	3 80	4 10	3 90	4 50	4 90	5	4 10	4 80	5 30	4 70	3 90	4 70	5 30	5	5 40	6 10	6 40					
6	3 50	4 00	4 50	4 30	4 80	5 30	6	4 60	5 10	5 50	5 10	4 30	5 10	5 60	6	6 10	6 70	7 10					
7	3 90	4 60	4 90	4 80	5 50	6 10	7	5 10	5 80	6 30	5 80	4 90	5 80	6 30	7	7 00	7 70	8 20					
8	4 30	4 90	5 40	5 30	6 10	6 60	8	5 50	6 30	7 00	6 30	5 40	6 30	6 70	8	7 50	8 30	8 90					
9	4 90	5 80	6 30	6 30	7 20	7 90	9	6 00	7 00	8 30	6 80	6 70	6 80	8 30	9	8 50	9 40	9 90					
10	5 60	6 40	7 00	7 00	8 10	8 70	10	7 40	8 50	9 10	8 70	7 50	8 70	9 80	10	9 10	10 10	10 70					
11	6 70	7 80	8 50	8 60	9 80	10 70	11	9 10	10 40	11 30	10 90	9 40	10 90	11 80	11	10 70	11 80	12 70					
12	7 50	8 60	9 40	9 70	11 00	12 10	12	10 20	11 50	12 80	12 30	10 70	12 30	13 50	12	11 80	13 00	13 90					
13	9 40	10 70	11 70	11 80	13 60	14 70	13	12 50	14 30	15 40	13 30	13 30	15 40	16 20	13	14 10	15 40	16 60					
14	10 70	12 20	13 10	13 30	15 30	16 70	14	13 90	16 10	17 50	15 00	15 00	17 00	18 20	14	15 50	17 00	18 30					
MILL—ONE ROUND EDGE				MILL—TWO ROUND EDGES				TAPERS		SLIM TAPERS		BAND SAW		PIT SAW		CANT SAW		CROSS CUT		HOOK TOOTH		PLANNER KNIFE	
INCH	2nd Cut		Smooth	Bastard	2nd Cut		Smooth	INCH	Single Cut	Double Cut	Single Cut	Double Cut	Regulair	Slim	Single Cut	Double Cut	Single Cut	Double Cut	Single Cut	Double Cut	Single Cut	Double Cut	
	Bastard	2nd Cut	Smooth		Bastard	2nd Cut																	Single Cut
4	\$3 40	\$3 90	\$4 40	\$3 80	\$4 40	\$4 90	3	\$2 10	\$2 50	\$2 10	\$2 50	\$2 50	\$2 50	\$2 50	4	\$4 80	\$4 30	\$4 80	Single Cut	Single Cut	Single Cut	Single Cut	
5	3 60	4 10	4 60	4 00	4 50	5 10	3 1/2	2 10	2 50	2 10	2 50	2 50	2 50	2 50	5	5 40	4 70	5 40	Single Cut	Single Cut	Single Cut	Single Cut	
6	3 90	4 30	4 80	4 40	5 00	5 60	4	2 20	2 90	2 20	2 60	2 90	2 90	2 90	6	6 10	5 40	6 10	Single Cut	Single Cut	Single Cut	Single Cut	
7	4 40	4 50	5 10	4 40	5 00	5 60	4 1/2	2 40	3 10	2 30	3 00	3 10	3 00	3 00	7	7 00	6 10	7 00	Single Cut	Single Cut	Single Cut	Single Cut	
8	4 80	5 50	6 10	5 40	6 10	6 80	5	2 60	3 50	2 50	3 20	3 50	3 20	3 20	8	7 50	6 80	7 50	Single Cut	Single Cut	Single Cut	Single Cut	
9	5 30	6 50	7 10	6 10	7 40	8 00	5 1/2	3 00	4 00	2 90	3 50	4 00	3 50	3 50	9	8 50	7 80	8 50	Single Cut	Single Cut	Single Cut	Single Cut	
10	6 30	7 20	7 90	7 00	8 00	8 80	6	3 40	4 70	3 30	4 30	4 70	4 30	4 30	10	9 10	8 70	9 10	Single Cut	Single Cut	Single Cut	Single Cut	
11	7 30	8 80	9 60	8 40	9 80	10 60	7	4 30	5 60	3 80	4 50	5 60	4 50	4 50	11	10 70	10 40	10 70	Single Cut	Single Cut	Single Cut	Single Cut	
12	8 40	9 70	10 60	9 40	10 80	11 80	8	5 40	6 70	4 50	5 30	6 70	5 30	5 30	12	11 80	11 40	11 80	Single Cut	Single Cut	Single Cut	Single Cut	
13	10 60	12 00	13 20	11 80	13 40	14 60	9	6 60	8 10	5 40	6 30	8 10	6 30	6 30	13	14 10	13 00	14 10	Single Cut	Single Cut	Single Cut	Single Cut	
14	12 00	13 70	14 70	13 40	15 30	16 40	10	8 10	9 70	6 40	7 30	9 70	7 30	7 30	14	15 50	14 00	15 50	Single Cut	Single Cut	Single Cut	Single Cut	

Write for prices on sizes not given. CLIMAX advance 2 in. on half round bastard. ROUND GULLETING, take pit-saw price. We handle the best File, but not the one costing least money.

CYCLONE WHEEL



Will run wet or dry. Guaranteed not to case harden.
All sizes in Stock.

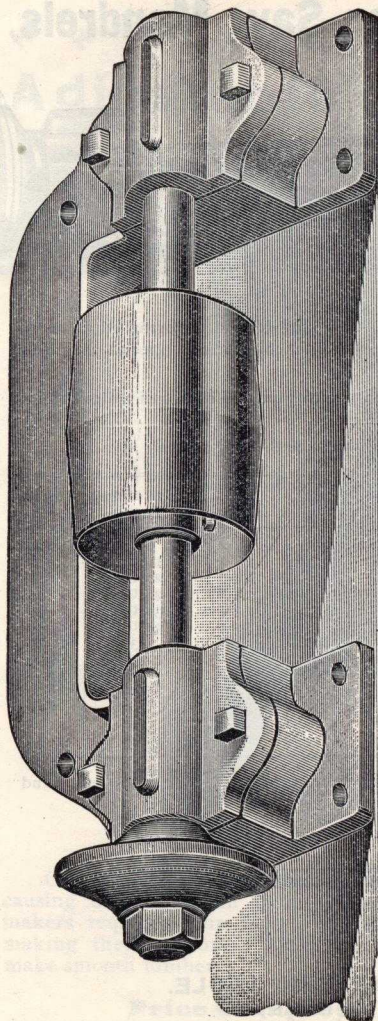
PRICE LIST.

All the leading Emery Wheels carried in stock.

State what work you expect to perform, and we will give you
a wheel that will do the work at a low price.

Diameter in Inches	Thickness of Wheels in Inches									
	1-4	5-8	3-4	1	1 1-4	1 1-2	1 3-4	2	2 1-4	2 1-2
1 1/2	40	45	45	50	55	60	65	70	75	89
2	50	52	55	60	65	70	75	80	85	90
2 1/2	65	70	75	85	95	1 05	1 15	1 25	1 35	1 45
3	75	85	85	1 10	1 25	1 35	1 45	1 60	1 85	1 85
4	1 10	1 25	1 35	1 60	1 90	2 20	2 50	2 75	2 85	3 25
5	1 40	1 60	1 80	2 10	2 60	3 00	3 45	3 80	4 20	4 65
6	1 75	2 15	2 50	3 05	3 70	4 30	5 00	5 60	6 25	6 90
7	2 30	2 75	3 15	3 95	5 00	5 60	6 40	7 25	8 10	8 90
8	2 60	3 10	3 60	4 50	5 70	6 40	7 60	8 30	9 60	10 20
9	3 15	4 50	3 85	4 90	6 80	8 05	9 25	10 25	11 25	12 95
10	3 70	4 40	5 10	6 60	8 10	9 50	11 00	12 40	14 25	15 35
12	5 25	5 50	6 00	7 40	9 00	10 70	12 75	14 00	15 70	17 40
14	6 20	7 45	8 70	10 70	13 25	15 20	17 80	19 50	21 80	24 20

Ask for prices on sizes not listed here. Liberal discount off list.



Ohlen's....

Yoke Mandrels

Made from best cold rolled steel shafting. Extra heavy frames and warranted in every way. Yokes made from 10 to 24 inches inclusive.

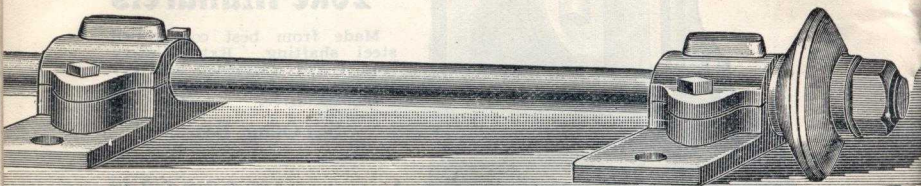
Self Oiling Boxes.

No.	Out to Out Boxes Inches	Diameter of Arbor Inches	PULLEY Diam. In.	Face In.	Size of Collar Inches	Size of Hole in Saw. Inches	Size of Saw Inches	Price, Each
No. 1-	10	15-16	2½	3	3	7/8	6	\$ 9 00
No. 2-	14	15-16	3	4	3	7/8	8	11 00
No. 3-	16	1 1-16	3½	4½	3½	1	12 to 14	12 50
No. 4-	18	1 3-16	4	5	3½	1 1/8	16 to 18	14 50
No. 5-	20	1 5-16	4½	5½	4	1 1/4	20 to 24	16 00
No. 6	22	1 7-16	5	6	4	1 3/8	26 to 28	18 00
No. 7-	24	1 9-16	6	7	4½	1 1/2	30 to 36	20 00

A Splendid Babbit Metal

At 8 cents per pound. A better grade at 10 or 12 cts. Try a few pounds.

Ohlen's Circular Saw Mandrels



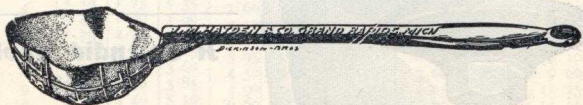
Ohlen's Circular Saw Mandrels. Any size desired. Warranted in every way. Write, stating size desired, for best net cash price. Special mandrels for special work made to order.

We fill all orders for Mandrels with pulley outside of boxes, unless otherwise ordered.

Price does not include saw. Cast steel. Self-oiling boxes.

Extreme Length Inches	Diameter of Arbor Inches	Diameter of Pulley Inches	Face of Pulley Inches	Diameter of Collar Inches	Size of Hole in Saw Inches	Size of Saw Inches	Price Each
16½	1 1-16	3	3	3	1	6 to 12	\$ 8 00
19	1 1-16	3	3 1-2	3	1	14 to 18	9 00
21½	1 3-16	3	4	3 1-2	1 1-8	20 to 24	9 50
24	1 3-16	3 1-2	4 1-2	3 1-2	1 1-8	26 to 28	11 25
26	1 5-16	4	5	4	1 1-4	30 to 32	12 50
28	1 5-16	4 1-2	5 1-2	4	1 1-4	34 to 36	14 00
30½	1 7-16	5	6	4 1-2	1 3-8	36	15 00
33½	1 7-16	5	6	4 1-2	1 3-8	36	18 00
37	1 9-16	6	7	4 1-2	1 1-2	38	23 50
41	1 11-16	7	8	5	1 5-8	40	28 00
44½	1 13-16	8	10	5	1 5-8	40	33 50
48	1 15-16	10	10	5	1 5-8	42	40 00
54	2 3-16	12	10	5	2	48	50 00

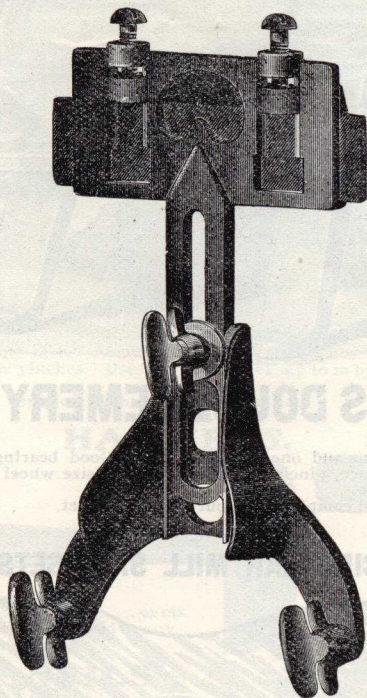
Our Mandrels are made with pulley on right hand side, with left hand thread, unless otherwise ordered.



OHLEN'S SMELTING LADLE.

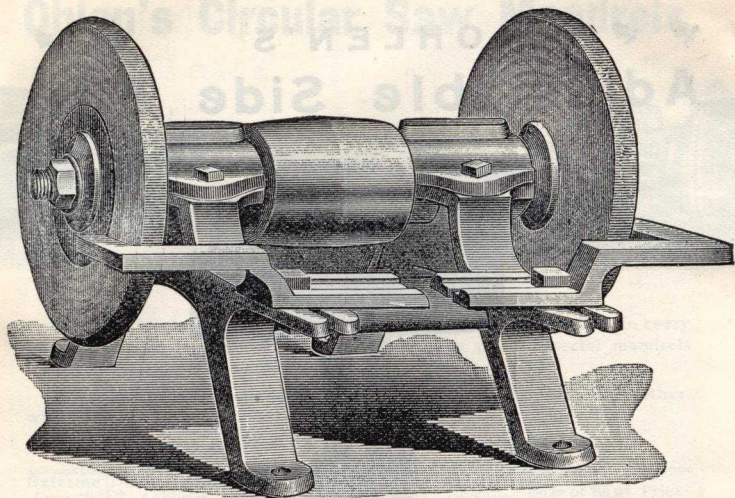
Send 90 c nts in stamps.

OHLEN'S Adjustable Side File



Our Side File is made so as to use any worn Mill File, not causing user to pay an exorbitant price for special file as other makers require. Our Side File regulates the width of tooth, making them uniform. They are indispensable. Get one and make smooth lumber.

Price Complete, Net \$1.00.

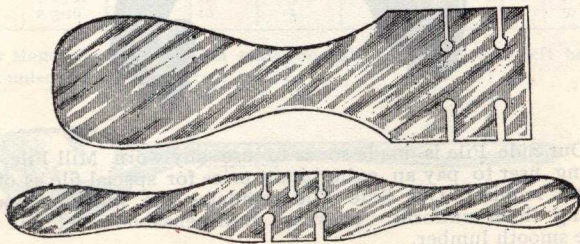


OHLEN'S DOUBLE EMERY STAND

Size shaft one and one-sixteenth inch. Good bearing, best of Babbitt. Pulley $3\frac{1}{2}$ inch face, 3 inch diameter. Use any size wheel up to ten by one inch, one inch hole.

Emery Stand complete, without wheel, \$7.75 net.

CIRCULAR MILL SAW SETS.

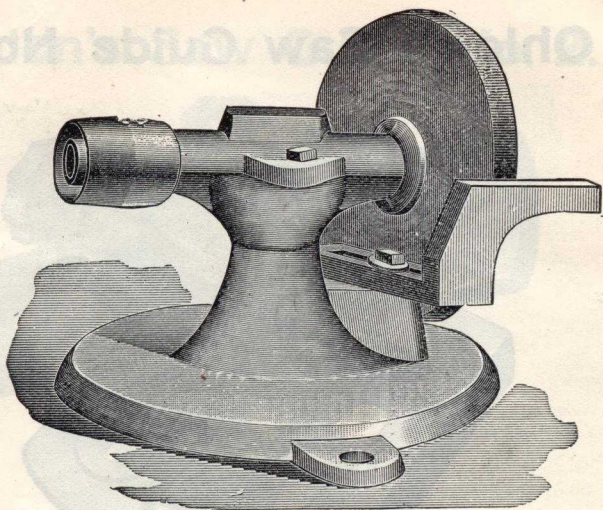


Made to suit saws of different sizes.

Price, large size,-----\$2 00

For Shingle Saws-----\$1 50

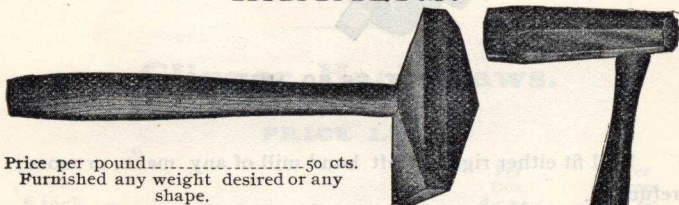
OHLEN'S SINGLE EMERY STANDS



Size shaft, one inch. Length of bearing, six inches. Best of Babbit.
Size of pulley, 3 by 3 inches. Use any size wheel up to 10 by $\frac{7}{8}$ inch with $\frac{7}{8}$ inch hole.

Emery Stan complete without wheel, 6.00 net.

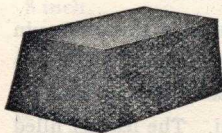
HAMMERS.



Price per pound.....50 cts.

Furnished any weight desired or any shape.

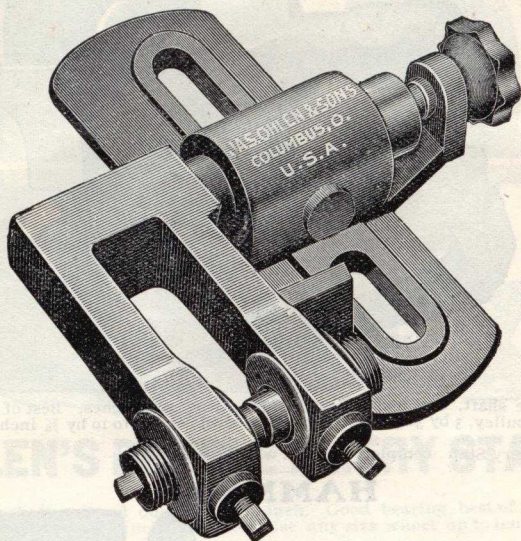
ANVILS



40 to 250 pounds, price.....12 cents per pound.

We have all sizes in stock.

Ohlen's Saw Guide No. 1.



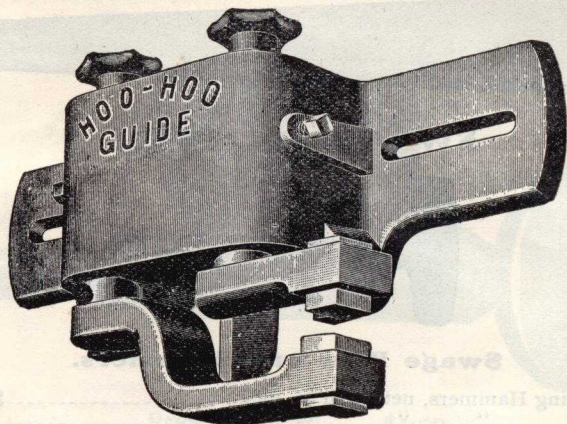
PRICE \$6.50 NET.

Will fit either right or left hand mill of any make, or money refunded.

Weight of Guide, 40 pounds.

DIRECTIONS:—Set up the two set screws so the guide pin will turn a little hard, make no further adjustment. The three set screws have a soft copper plug on ends, so in setting them up it will not mar or cut the threads in guide pin. The leather filled plugs in guide pin will keep the saw from drumming.

Ohlen's Saw Guide No. 2.



PRICE, \$12.00 NET.

Weight 80 pounds. For larger mills.

Clipper Hack Saws.

PRICE LIST

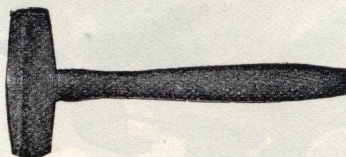
	Per Doz.	Per Gross
6 inch.....	\$0.55	\$6.60
7 inch.....	.60	7.20
8 inch.....	.65	7.80
9 inch.....	.70	8.40
10 inch.....	.85	10.20
11 inch.....	.95	11.40
12 inch.....	1.05	12.60
14 inch.....	1.25	15.00
Assorted.....	.65	7.80

We carry a full stock of Hack Saw Frames.

SWAGE BAR.



SWAGE HAMMER.



Swage Bars and Hammers.

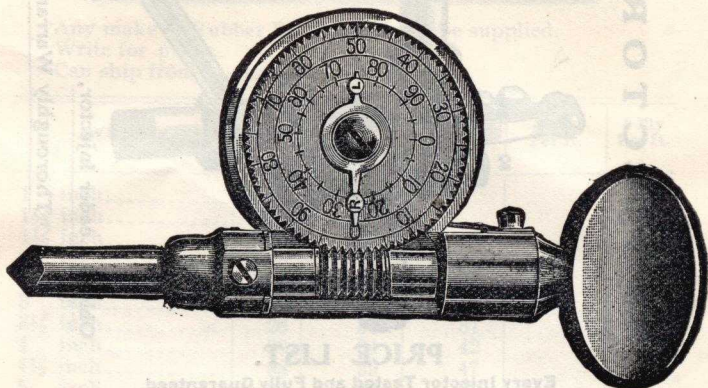
Swaging Hammers, net, each	$\frac{3}{4}$ inch	\$1.00
" " " "	$\frac{7}{8}$ inch	1.25
" " " "	1 inch	1.50
No. 1—Bar, 8 or 6 sided, 11x1x1 $\frac{1}{2}$	inch	2.50
" 2—Bar, 8 or 6 sided, 11x1 $\frac{1}{4}$ x $\frac{5}{8}$	inch	3.00
" 3—Bar, 8 or 6 sided, 11x1 $\frac{1}{2}$ x $\frac{3}{4}$	inch	3.50
" 4—Bar, 8 or 6 sided, 11x1 $\frac{3}{4}$ x $\frac{7}{8}$	inch	4.00

STRAIGHT EDGES



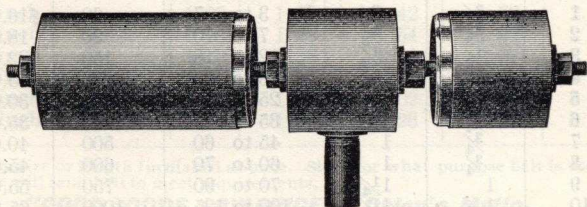
12 inch, price each	\$0.65	48 inch, price each	\$3.00
18 " " " "	.95	52 " " " "	3.50
24 " " " "	1.36	54 " " " "	3.70
30 " " " "	1.65	56 " " " "	4.00
36 " " " "	1.95	60 " " " "	4.60
40 " " " "	2.10	72 " " " "	5.50
44 " " " "	2.30		

SPEED INDICATORS.



Price with Bell, \$1.50
 " without Bell, .90

OHLEN'S PATENT GONG WHISTLE.



It is made all of iron and will last forever.

It makes an entirely different sound from an ordinary whistle. It can be heard distinctly from six to eight miles.

Diameter of Gong.

4-Inch

6-Inch

8-Inch

10-Inch

Price.

\$12.00

14.00

20.00

30.00

Size of Steam Inlet.

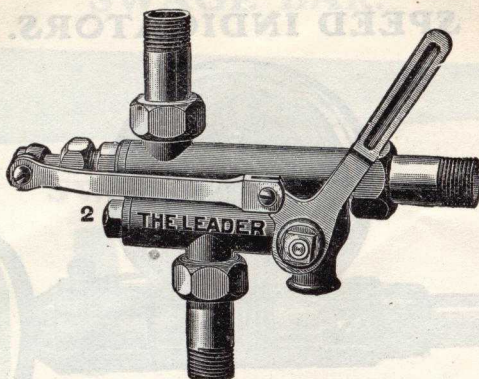
1½ Inch.

1½ Inch.

2 Inch.

2½ Inch.

INJECTOR



Ohlen's Leader Injector,

Thoroughly Warranted.

PRICE LIST.

Every Injector Tested and Fully Guaranteed.

No. of Injector.	Size of Pipes.		Horse Power of Boiler Will Feed.	Gals. per Hour & lbs. Steam.	Price List.
	Steam Pipe.	Suction and Feed.			
1	$\frac{3}{8}$	$\frac{3}{8}$	3 to 7	60	\$16.00
2	$\frac{3}{8}$	$\frac{3}{8}$	7 to 10	90	18.00
3	$\frac{1}{2}$	$\frac{1}{2}$	12 to 18	150	22.00
4	$\frac{1}{2}$	$\frac{1}{2}$	18 to 25	220	25.00
5	$\frac{3}{4}$	$\frac{3}{4}$	25 to 35	300	30.00
6	$\frac{3}{4}$	$\frac{3}{4}$	35 to 45	400	35.00
7	$\frac{3}{4}$	1	45 to 60	500	40.00
8	$\frac{3}{4}$	1	60 to 70	600	45.00
9	1	$1\frac{1}{4}$	70 to 90	750	55.00
10	1	$1\frac{1}{4}$	100 to 125	1000	65.00
11	$1\frac{1}{4}$	$1\frac{1}{2}$	125 to 150	1300	75.00
12	$1\frac{1}{4}$	$1\frac{1}{2}$	150 to 200	1800	90.00

Above Prices Subject to Liberal Discount.

When Ordering an Injector Please State

FIRST.—The horse-power of your boiler and engine.

SECOND.—Give steam pressure carried.

THIRD.—If water is taken under pressure or lift.

FOURTH.—If water is to be lifted give lift or distance from the Injector to the water supply, both vertically and horizontally.

In Ordering Repairs, Please Give the Stock Number.

Ohlen's Rubber Belt.

Any make of Rubber Belt wanted can be supplied.
Write for prices.
Can ship from stock at once.

WIDTH	2-Ply Per ft.	3-Ply Per ft.	4-Ply Per ft.	5-Ply Per ft.	6-Ply Per ft.
1 inch.....	\$0 07				
1 1/4 inch.....	09				
1 1/2 inch.....	11				
2 inch.....	15	\$0 17	\$0 21		
2 1/2 inch.....	18	22	26		
3 inch.....	22	26	31		
3 1/2 inch.....	26	30	37		
4 inch.....	30	34	42		
4 1/2 inch.....	33	39	47		
5 inch.....	36	43	52		
6 inch.....	43	52	62		
7 inch.....	51	60	73		
8 inch.....	59	70	84	\$1 05	\$1 28
9 inch.....	67	80	95	1 18	1 42
10 inch.....	75	90	1 07	1 33	1 60
11 inch.....	83	1 00	1 18	1 47	1 77
12 inch.....	91	1 08	1 30	1 62	1 95
13 inch.....	1 00	1 18	1 42	1 77	2 13
14 inch.....	1 08	1 28	1 54	1 92	2 31
15 inch.....	1 16	1 38	1 66	2 07	2 49
16 inch.....	1 25	1 50	1 78	2 22	2 67
18 inch.....	1 41	1 70	2 02	2 52	3 03
20 inch.....	1 58	1 90	2 26	2 82	3 39

Any size or length furnished at once. State for what purpose belt is used, and we will send belt to meet requirements.

"GOOD GOODS, LOW PRICES," Ohlen's Motto.

OHLEN'S SPECIAL BRAND LACING.

Price List of Cut Lacing.

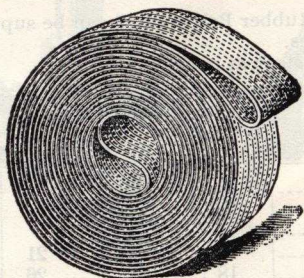
1-3 inch, per bunch.....	\$1.00
5-16 inch, per bunch.....	1.25
3-8 inch, per bunch.....	1.50
7-16 inch, per bunch.....	1.75
1-2 inch, per bunch.....	2.00
5-8 inch, per bunch.....	2.75
3-4 inch, per bunch.....	3.25

Both Raw Hide and Tanned.

Put up in 100 Foot Bunches.

**Side Lace Leather
at 25 Cents per
Square Foot.**

Ohlen's Gandy Belting



We have in stock the genuine Gandy Belt and can ship at once. Prices lower than elsewhere. For either indoor or outdoor heavy work, Gandy Belt is better than rubber as it is not effected by change of weather.

Gandy Belt, 4-ply, is equal to single leather belt or 3-ply rubber.

Price List of Ohlen's Gandy Belting.

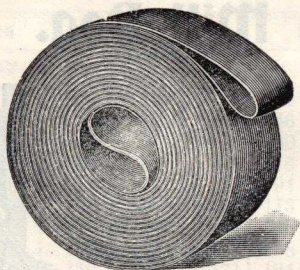
4-PLY		Per Ft.	6-PLY		Per Ft.
1	inch	\$0 10	2	inch	\$0 29
1½	"	15	2½	"	36
2	"	20	3	"	44
2½	"	25	3½	"	51
3	"	30	4	"	58
3½	"	35	4½	"	65
4	"	40	5	"	73
4½	"	45	6	"	87
5	"	50	7	"	1 02
6	"	60	8	"	1 16
7	"	70	9	"	1 31
8	"	80	10	"	1 45
9	"	90	11	"	1 60
10	"	1 00	12	"	1 74
11	"	1 10	13	"	1 99
12	"	1 20	14	"	2 13
13	"	1 37			
14	"	1 47			

Three feet extra charged for splice on Endless Belts.

WRITE FOR DISCOUNT.

Can Furnish any Width and any Ply Desired.

Ohlen's Leather Belts.



We handle none but best Leather Belt made. Have goods in stock for immediate shipment. Prices reasonable.

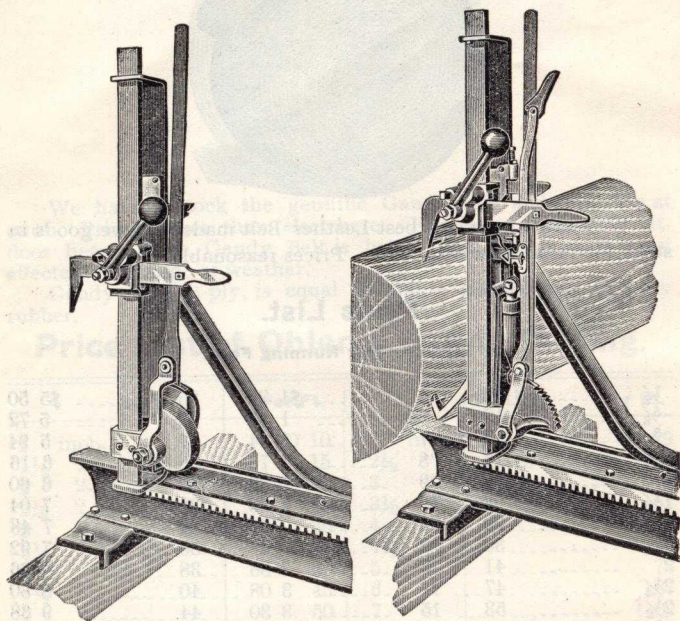
Price List.

SINGLE—Per Running Foot.

$\frac{1}{2}$	-----	\$0 10	6	-----	\$1 32	25	-----	\$5 50
$\frac{5}{8}$	-----	12	$6\frac{1}{2}$	-----	1 43	26	-----	5 72
$\frac{3}{4}$	-----	14	7	-----	1 54	27	-----	5 94
$\frac{7}{8}$	-----	16	8	-----	1 76	28	-----	6 16
1	-----	17	9	-----	1 98	30	-----	6 60
$1\frac{1}{4}$	-----	23	10	-----	2 20	32	-----	7 04
$1\frac{1}{2}$	-----	29	11	-----	2 42	34	-----	7 48
$1\frac{3}{4}$	-----	35	12	-----	2 64	36	-----	7 92
2	-----	41	13	-----	2 86	38	-----	8 36
$2\frac{1}{4}$	-----	47	14	-----	3 08	40	-----	8 80
$2\frac{1}{2}$	-----	53	15	-----	3 30	44	-----	9 68
$2\frac{3}{4}$	-----	59	16	-----	3 52	48	-----	10 56
3	-----	64	17	-----	3 74	52	-----	11 44
$3\frac{1}{4}$	-----	70	18	-----	3 96	56	-----	12 32
$3\frac{1}{2}$	-----	76	19	-----	4 18	60	-----	13 20
$3\frac{3}{4}$	-----	82	20	-----	4 40	64	-----	14 08
4	-----	87	21	-----	4 62	68	-----	14 96
$4\frac{1}{2}$	-----	98	22	-----	4 84	72	-----	15 84
5	-----	1 09	23	-----	5 06			
$5\frac{1}{2}$	-----	1 21	24	-----	5 28			

Double Belting, Twice the Price of Single.
Send for Discounts.

Knight's New Ideal Saw Mill Dog.



We have sold large numbers of the above Dogs, and our customers in every instance have had the best of results. They are the strongest and easiest adjusted of any on the market. To any person reliable, we will put them in on thirty days' trial.

No. 1.	For Pony Mills, per pair.....	\$25 00	\$ 45 00
No. 2.	For Medium Mills, per pair.....	30 00	50 00
No. 3.	For Heavy Mills, per pair.....	35 00	55 00
No. 3.	Special for Steam Feed.....	60 00	85 00
No. 4.	Extra Heavy, for Steam Feed.....	85 00	125 00

The Mill Dogs are made right and left hand. For a right hand mill a right hand Dog is used on the front head block and a left hand on the rear block. On a left hand mill a left hand Dog is used on the front head block and a right hand on the rear.

OHLEN'S LOG TABLE

BY DOYLE'S RULE.

LENGTHS					DIAM.	LENGTHS				
8	10	11	12	13		14	15	16	17	18
19	23	25	27	29	10	32	34	36	38	40
25	32	34	37	40	11	43	46	49	52	55
32	40	44	48	52	12	56	60	64	68	72
41	50	55	61	66	13	71	76	81	86	91
50	62	65	75	81	14	88	94	100	106	112
61	75	83	91	98	15	106	113	121	128	136
72	90	99	108	117	16	126	135	144	153	162
85	105	116	126	137	17	148	158	169	179	190
98	122	135	147	159	18	171	184	196	208	220
113	140	154	169	182	19	197	211	225	239	253
128	160	176	192	208	20	224	240	256	272	288
145	180	198	217	235	21	253	271	289	307	325
162	202	223	243	263	22	283	303	324	344	364
180	225	248	271	293	23	313	331	359	383	406
200	250	275	300	325	24	350	375	400	425	450
221	275	302	331	358	25	386	413	441	468	496
242	302	333	363	393	26	423	453	484	514	544
265	330	363	397	403	27	463	496	530	563	596
288	360	396	432	468	28	504	540	576	616	648
313	392	430	429	508	29	547	586	625	664	703
338	422	465	507	549	30	591	633	676	718	761
365	457	501	547	592	31	638	683	729	774	820
382	490	539	588	637	32	686	735	784	833	882
421	526	578	631	684	33	736	789	842	895	946
450	562	619	675	731	34	787	844	900	956	1012
481	601	661	721	781	35	841	901	961	1021	1081
512	640	704	768	832	36	896	960	1024	1098	1151
545	681	749	817	894	37	953	1021	1089	1157	1225
578	732	795	867	939	38	1011	1083	1156	1228	1300
613	765	842	918	996	39	1070	1149	1225	1302	1379
648	810	891	972	1053	40	1134	1215	1296	1377	1458
685	855	942	1027	1113	41	1198	1284	1369	1455	1541
712	903	994	1083	1173	42	1264	1354	1443	1534	1615
761	952	1046	1141	1237	43	1331	1426	1521	1616	1711
800	1000	1100	1200	1300	44	1400	1500	1600	1700	1800
840	1051	1156	1261	1366	45	1471	1576	1681	1786	5891
882	1103	1213	1323	1434	46	1544	1654	1794	1874	1985
924	1156	1271	1387	1502	47	1618	1734	1849	1964	2080
967	1210	1331	1452	1573	48	1694	1815	1936	2057	2178
1012	1265	1392	1519	1645	49	1772	1898	2025	2152	2278
1058	1322	1455	1587	1719	50	1850	5983	2116	2248	2390

Ohlen's Log Rule

Subtract four inches from the diameter, multiply by one-half the remainder, multiply by the length of the log in feet, divide by 8; this gives the number of feet in any log, no matter what the length or diameter, same as Scribner's Log Book.

How to Calculate Speed

To find the speed of a countershaft, if the revolutions of the main shaft and size of pulleys are given:

Multiply the revolutions of the main shaft by the diameter in inches of the pulley and divide by the diameter inches of the pulley on the counter-shaft; the quotient will be the number of revolutions.

Example.—What will be the speed of a counter-shaft with a 12-inch pulley, driven by a 30-inch pulley 180 revolutions per minute? $180 \times 30 \div 12 = 450$.

To find the size of a pulley required, if the number of revolutions and size of pulley on the main shaft are given :—Multiply the diameter in inches of driving pulley by the revolutions of the main shaft, and divide by the speed required; the quotient will be the diameter in inches of the pulley.

Example.—What will be the diameter of a pulley to make a counter-shaft turn 450 revolutions per minute, driven by a 30-inch pulley 180 revolutions per minute? $180 \times 30 \div 450 = 12$ -inch pulley.

To find the size of a pulley for a main shaft if the speed of shafts and diameter of the pulley on the counter-shaft are given : Multiply the diameter in inches of pulley by speed of the counter-shaft; the quotient will be the diameter of the pulley.

Example.—What will be the diameter of a pulley on a main shaft making 180 revolutions per minute to drive a 12-inch pulley 450 revolutions per minute? $450 \times 12 \div 180 = 30$ -inch pulley.

To Be A Successful Sawyer

1st. Acquire a sufficient knowledge of machinery to keep a mill in good repair.

2d. See that both the machinery and saws are in good order.

3d. It does not follow because one saw will work well that

another will do the same on the same mandrel, or that even two saws will hang alike on the same mandrel ; on the principle that no two clocks can be made that tick alike, no two saws can be made that will run alike.

4th. It is not well to file all the teeth of circular saws from the same side of the saw, especially if each alternate tooth is bent for the set, but file one-half the teeth from each side of the saw, and of the teeth that are bent from you, so as to leave them on a slight bevel and the outer corner a little the longest.

5th. Never file any saw to too sharp or acute angles under the teeth, but on circular lines, as all saws are liable to crack from sharp corners.

6th. Keep your saw round, so that each tooth will do its proportional part of the work, or, if a reciprocating saw, keep the cutting points jointed on a straight line.

7th. The teeth of all saws wear narrowest at the extreme points ; consequently they must be spread so that they will be widest at the very points of the teeth, otherwise saws will not work successfully.

8th. Teeth of all saws should be kept as near a uniform shape and distance apart as possible, in order to keep a circular saw in balance and in condition for business.

Speed of Circular Saws

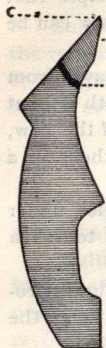
This is of the utmost importance and too much attention cannot be given to it. If a saw is speeded too high, it will run crooked and will heat around the rim, and in that condition it will run any way, and be liable to cause an accident. It will dodge either way upon striking the least obstacle. If speeded too slow it has objections, but not so ruinous to the saw. Thus hammered it will run out of the log and heat around the eye. In this condition it will dodge either way on striking an object. This can only be overcome successfully by sending to the factory to be re-adjusted to your speed. Always state speed you run while in the cut, also feed and hand of saw.

Address all saws, etc., to

THE JAMES OHLEN & SONS SAW MFG. CO.,
(Mark in full.) COLUMBUS, OHIO.

The speed usually run by portable mills is from 300 to 450 ; larger mills and steam feeds from 600 to 850 revolutions.

Directions For Care of Saw Points



Use flat side of file at "A" for pointing up
Round side of file at "B" for keeping
tooth in proper shape.

And "C" file no more than to knock
off bur.

When inserting new points observe the
following :

Wipe plate, particularly point seat, per-
fectly clean.

Oil grooves in points and shanks.

If point does not start readily, tap lightly
on top of point with wrench.

Side dress the points the same as in the case of a solid saw.

Avoiding filing point on top, except so far as necessary to keep
angle to extreme, cutting point same as when point was new.

Never apply a file to the plate.

In sharpening always keep same angle on underside of point
as when point is new.

INSERTING NEW SHANKS. When inserting a new set of
shanks, first draw in each shank, using as a "starter," the point
which we furnish for this purpose, with each new saw and with
each new set of shanks. Then remove "starter" and put in
regular point.

General Hints For Filing or Dressing Saws

Give saw tooth the proper spread and pitch for the kind of
wood it is supposed to cut.

Soft wood requires greater quantity of spread or set, and less
pitch, while hard wood is just the reverse. Oil or grease should
be used on point of tooth. Many saws are claimed defective
when the trouble lies in the swedging not being wide or strong
enough to resist the wood it is cutting, causing corners to drop off.
In this case the saw is not at fault. Give the tooth a full swedge
and then dress down with our Side File herein illustrated. This

gives the saw smooth cutting power and more strength and enables sawyer to reduce the swedge to suit. Do not file back of tooth only enough to dress it up.

Fast Feeds require a saw with low back of tooth which gives the saw more dust room and easier clearance.

Avoid having backs of teeth higher than the point, which will cause saw to bind and heat on rim. Have extreme point of tooth the widest.

Emery Wheels and Bur Gummers

Great care should be taken in using emery wheels for gumming purposes that the operator does not destroy the tension of the blade, also case-harden the blade. Great caution should be exercised in gumming with emery so as not to blue the steel, which causes it to break off or crumble. To overcome this use our Cyclone emery wheel, warranted not to case-harden, and apply an emery dresser, which we have for sale, that will prevent the wheel from getting smooth and burning blade.

In gumming a saw do not attempt to finish the first round. Make three or four rounds of it, thus prevent case-hardening. Should you be so unfortunate as to case-harden the saw, apply our dresser to the emery wheel; thoroughly opening it, and then go lightly over each tooth, thereby drawing the case-harden from the blade.

When using bur gummers it is impossible to case-harden a saw, or to ruin the tension of the blade. We have an automatic gummer which gives teeth the same pitch and gullet the same depth. All of which is a great advantage over emery grinding.

Pertaining to New Saws and Saws That Have Been Repaired

Before putting saw on mandrel see that the arbor is level and perfectly true, also proper end-play (not over the thickness of a piece of writing paper.) Collars must be perfectly true so when tightened up they do not spring saw.

Use a plumbing bob or spirit level in plumbing the saw. Track must be perfectly level and in proper line. To line a track perfectly, spread head blocks as far apart as possible on carriage,

and see that they are set on rim of carriage solid. Run carriage up until the blocks come within about five feet of guide, let the front block go back past the tail of saw as far as it will, then stretch your line around the point of the blocks, if they have not been broken off. If they have, measure out from the first inch mark to the point of the block. Have tail of saw 1-16 of an inch farthest from line. This will give lead enough for any saw 48 inches and larger. This will give travel of carriage. To set a track, get a line full length and fasten clear of track. This is necessary that it may be moved without bothering line. Adjust the track to this line, giving lead 1-16 inch. Do not screw guide pins against saw until it is in motion. Then screw them up so they may run perfectly free. Should saw lead one way or other, change lead little by little until it runs perfectly straight. Should saw run out of log, change your lead in, and should it lead in change it the reverse. Great care should be taken not to change too much at one time. Always examine your mill every morning before starting up. See that everything is in good shape. Invariably go over a mill before putting in a new saw, or one that has just been repaired. If this is not done the saw is likely to be in bad shape after the very first cut. Keep your saw round.

Remarks

It is very important in setting a portable mill, that it be set solid so as to not move in sawing. Place the sills on which frame is set on a solid foundation by excavating. In freezing and thawing weather this will not cause the mill to get out of shape so quickly as if set immediately on the ground. Fasten frame firmly to sills. See that frame is level in every way.

In ordering saws, it is of the utmost importance that one be selected that is best suited for requirements as to number of teeth and gauge. We are always glad to select such a saw if left to our judgment. However, we will supply any saw the order may specify. A saw having too many teeth on a light mill will run very hard. A saw having not enough teeth on a heavy mill will run bad, and lose its tension. We would suggest that parties ordering saws, give size of mill, engine, feed and speed used, and

just what saw is expected to do, and allow us to send a saw to suit. We guarantee to do this.

Examine mill every day, and see that it is in good shape. No saw can work well when mill is out of order.

Oil both sides of saw frequently.

Keep saw perfectly round. Gum lightly but often. Never let teeth get blunt.

You can handle logs with less labor by having mill set in ground a foot or so.

Try to shape your teeth same as when new. See page No. 6 in this book for different styles.

Before inserting bits or shanks, carefully grease grooves with tallow or oil, thus preventing wear and rapidly becoming too large.

A sawyer must have a good swedge, file, gummer, side file, oil, mill and engine, and best of all some lively, energetic help, or but little lumber can be made.

A side file will make smoother lumber than if gauged by the eye.

Insist on having a saw bearing the brand of "**The James Ohlen & Sons Saw M'fg. Co.,**" and accept no other. Dealers will order it for you gladly.

We are always glad to answer any questions and supply you with our catalogues and printed matter.

It is a pleasure to take our patrons through our factory and explain the different processes used in turning out what can be well considered the most superior Solid and Inserted Tooth Circulars Saws on the market.

We have attained that position only after a half century's experience. Our trade can always depend on the benefit of that experience.

With a full appreciation of the confidence and favors shown us in the past, and with the assurance of the high standard being fully maintained in the future, we are,

Most respectfully,

THE JAMES OHLEN & SONS SAW MFG. CO.

COLUMBUS, OHIO, U. S. A.

Filing Saws

In every instance we recommend the use of a file having one round edge, which prevents a square gullet from forming. A gullet will invariably crack the blade. Our warranty does not cover this. After beveling the front of tooth, apply a few strokes with a round cornered file to the base of tooth. Only carry bevel tooth down about one-half length. A saw will thus clear itself better. File backs of cross cut saws always square. On cross cut saws bevel the front of tooth one way, the next tooth the opposite way. File rip saws square in front.

Avoid a delicate swedge. Swedge out wide and then dress down to required width. Most cases of complaints for saw crumbling are caused by too delicate a swedge being used, as the corners of tooth are not strong enough to resist the wood it is cutting.

Directions for Hanging Circular Saws

1. The fast collar on the saw mandrel must be perfectly true, and about one-thirty-second of an inch concave on the face; the loose collar should be flat or slightly concave. The object of this arrangement of the collars is to insure their pressing the saw at their peripheries, and also for the purpose of maintaining the saws flat and straight on the log side.
2. The mandrel must fill the eye of the saw, go in free, and both pins have a fair bearing.
3. If after the collars are screwed up, the face of the saw is not flat, or it does not run true, segments of circles cut from thin paper should be put between the fast collar and the saw sufficient in thickness to remedy the defect.
4. The mandrel must be level, so that the saw will stand plumb. The bearings must fill the boxes, and the end-play should be very light, if there is any.
5. Set the spread wheel full flush with the face of the saw, and half an inch clear of the teeth.
6. Adjust the mandrel so as to give the saw a little lead into the log. This lead or deflection should not exceed one-eighth inch in twenty feet.
7. Adjust the guide pins clear of the teeth, and close enough

to touch the plate at some point in its revolution. This should be done while the saw is in motion.

8. If a saw warms at or near the center, it is evident that it requires more lead into the log. If it warms near the teeth, it should be lead out of the log. The only proper way to change the line of direction of the saw is by slewing the mandrel in the way necessary to accomplish the object.

9. If after the mandrel and guide-pins have been properly adjusted, the saw does not run straight, but will run either way, as the case may be, a thorough examination should be made and the difficulty ascertained and corrected. The fault most commonly met with is the want of power sufficient to run the saw at a uniform speed. No saw can do good work running at a high velocity unless the motion is made uniform. The proper remedy to be applied when power is deficient, is to reduce the speed of saw to the velocity that can be maintained and have saw hammered stiff. The saw should be hammered specially if it is to run at a very high speed.

Saw Hammering

Practice is the only thing that will enable a mechanic to acquire skill in tensioning saws. This applies to saws more than any other tool manufactured or used. Before a saw can properly be finished ready to ship to the mill, or before it can be repaired, it is necessary to know what speed and feed the saw makes while in the cut, also hand of mill, and what horse power engine is used, and above all things it is highly important that mill be in good condition.

From conversation with our most skilled mechanics, as well as close observation during a life time experience in the manufacturing of the World's Greatest Saws, namely, the Ohlen, we are able to give a few ideas as to how one may learn the art of repairing or hammering saws. A circular saw, to do proper work, must have the body of saw opened out between the center and rim sufficiently for the speed saw is to run in the cut.

A thin saw high speeded requires that the blade be opened out until it takes a strong pull to throw the center either way when saw is standing on floor. A saw properly tensioned, and

being shaken or pulled through, the body alone will vibrate, and the rim will be nearly steady.

Gumming a circular saw or heating and cooling at the rim will permanently expand saw at rim so that saw will soon become stiff in center of saw and run "snaky." To remedy this apply a round face hammer a few strokes, beginning, perhaps, 8 or 10 inches from the eye. This must be regulated by constantly trying the saw, and using a good practical judgment. Should a saw be placed at too low a speed, hammer as above stated, and observe the fact that a saw must be more open or limber in body of saw for fast speed than for slow speed; also more open or limber for hard than soft wood.

When saw is standing on floor, and shaken with the hand, and both center and rim vibrates, the saw will require hammering near the center, but when body of saw is to be opened out, do not hammer within 6 to 10 inches of the center.

When a saw is run up to speed for which it is intended, should it run wavy on rim, it needs opening out in the body of saw. Should it run steady and true out of log, it is the fault of hanging, lining, fitting or managing if it does not run steady and true in the log. Remember saw must be hammered out from 6 to 10 inches on both sides with a round face hammer to open body of saw for high speed, or when it runs wavy on rim in full motion. To examine a saw, it is necessary to have an anvil, a bench running back from anvil to wall, and a straight edge. Let rim rest on bench, center of saw on anvil, then lift with left hand the opposite side of saw, and place straight edge extending from center towards rim of saw.

If saw is properly opened in the body, the portion beneath and opposite the mechanic, will drop away from straight edge. To make tension equal, the parts which drop least require hammering until the tension equalized. This must be done clear around the saw. The center should drop a trifle more than any place else.

Remove lumps by hammering on the side on which the lumps are or on that point of saw which touches straight edge. To find lumps or ridges, stand saw on floor perpendicularly applying straight edge on center, but to find them on rim, lay saw flat on anvil, then apply straight edge on rim. Use chalk to indicate the

high places, and hammer on either side of saw by laying on a wooden block, or, better still, the regular anvil. (See pages 65 and 66 for prices on saw maker's tools.)

Every blow of the hammer on saw when on an anvil opens the tension at point named. If a wooden block is used for removing lumps, it will not effect the tensions. Tension must be adjusted by hammering saw on the anvil. Lumps most always run in ridges, and should be taken out by a cross pene hammer. Change hammer over between each blow in order that the strokes cross each other. Strokes must be directly on each lump or ridge.

Always adjust the tension with a hammer having slightly oval and perfectly round face. Test the saw with a straight edge between the center and edge while flooring the saw. Go all around the saw marking the ridges and lumps. Lightly apply hammer on parts marked. After this process of leveling, see if tension remains as before, and if so your saw is ready to go on the mandrel to be tested, but should it not be, adjust the tension again with a round face hammer, then level it again and if necessary adjust for tension, put on mandrel, run to speed. If saw runs steady and true, it is ready for fitting, and when properly hung and fitted, it will stand up to its work.

Selection of Saws

It is true that the amount of hammering and other repairing required on a saw is regulated much by the amount of work and kind of work it does; it is equally true that if saw is properly made in point of temper and first tensioning, that it will not require half the work. In using the Ohlen Saw, the purchaser is sure of a saw made from the finest select steel, and each blade is given a tough even temper, and that it is tensioned perfectly to the work required. It has taken years of experience and thousands of dollars to make our plant the largest, most complete and up-to-date saw factory the world ever knew. We are always willing to give our patrons the benefit of our knowledge.

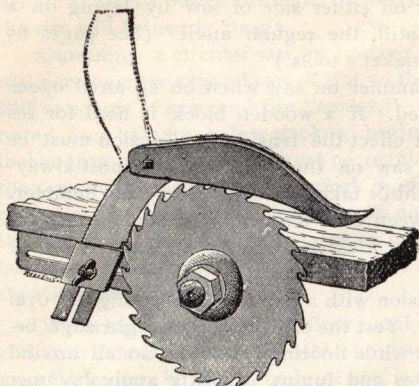
State clearly just what you expect saw to do, and under what conditions, and we will send you a saw that will do the work.

Soliciting your trade, we are,

THE JAMES OHLEN & SONS SAW MFG. CO.

COLUMBUS, OHIO, U. S. A.

ESTABLISHED 1852.



Ohlen's Reliable Saw Guard

It protects your saw and operator as well. Made of best iron and steel and will last forever. Operated with one thumb screw.

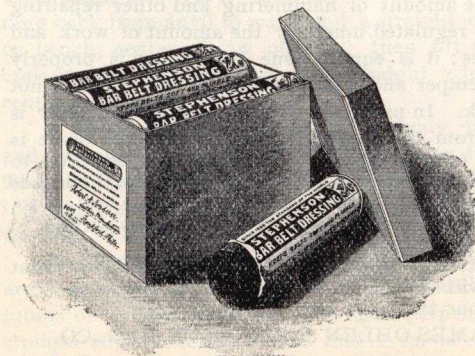
Size No. 1 for Saws 6 to 12 in. diameter (weight 4 lbs.), price \$5.75

Size No. 2 for Saws 10 to 16 in. diameter (weight 4½ lbs.) price 6.25

Size No. 3 for Saws 14 to 20 in. diameter (weight 6 lbs.) price 6.75

In ordering state whether a right or left hand guard is wanted. When saw is revolving towards you, your right hand would be right hand guard.

To attach Guard to table, bolt the holder to underside of table, so the steel spreader passing through the table will line with saw next to gauge.



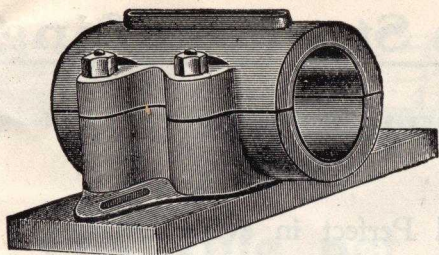
Ohlen's Special Belt Dressing

In Bars

enables operators of belts to run them loose.

Price, 40c per pound which is 11 inches long by 1½ inches in diameter.

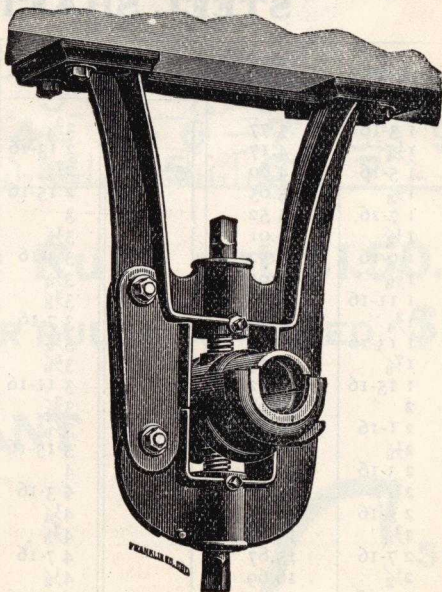
NO OTHER DRESSING ON THE MARKET HALF AS GOOD.



**Ohlen's
Pillow
Block**

Ohlen's Ball and Socket Hanger

**Ohlen's
Adjustable Ball
and Socket
Post Hanger**
Ball Bearings



**Ohlen's
Adjustable Ball
and Socket
Post Hanger**
Capillary Bearings

Prices on above quoted upon request.

In asking for quotations on Pillow Blocks or Post Hangers, state whether capillary or standard bearing is wanted. Also give size of shaft.

Ohlen's Steel Shafting

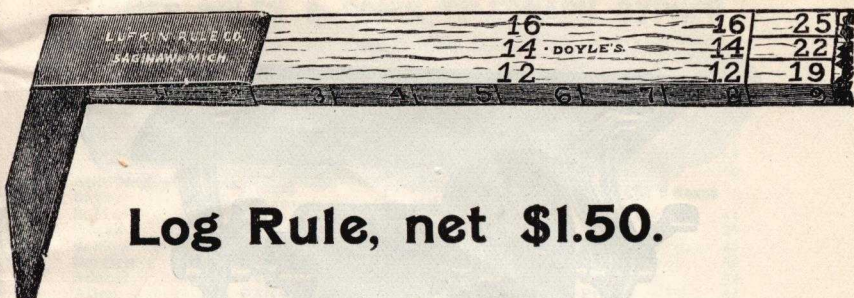
PRICE LIST

Warranted Perfect in every Detail.

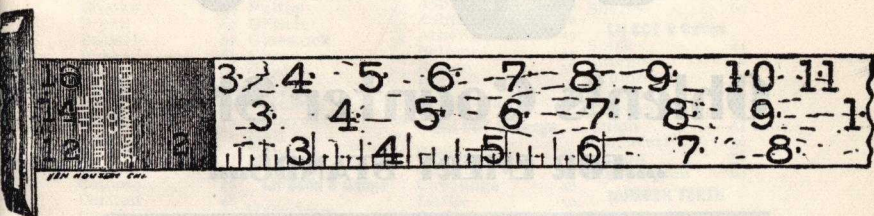
All Sizes in Stock.

STEEL SHAFTING

Diam.	Weight per foot	Price per lb.	Diam.	Weight per foot	Price per lb.
1 3-16	3.77	} 5½ cts.	2 3/4	20.19	} 5 cts.
1 1/4	4.17		2 13-16	21.15	
1 5-16	4.60		2 7/8	22.07	
1 3/8	5.05		2 15-16	23.04	
1 7-16	5.52		3	24.03	
1 1/2	6.01		3 1/8	26.09	} 5¼ cts.
1 9-16	6.52		3 3-16	27.13	
1 5/8	7.05		3 1/4	28.21	
1 11-16	7.60		3 3/8	30.43	
1 3/4	8.18		3 7-16	31.55	
1 13-16	8.78	} 5 cts.	3 1/2	32.71	} 5½ cts.
1 7/8	9.39		3 5/8	35.09	
1 15-16	10.02		3 11-16	36.31	
2	10.68		3 3/4	37.55	
2 1-16	11.35		3 7/8	40.10	
2 1/8	12.07		3 15-16	41.40	} 6 cts.
2 3-16	12.78		4	42.72	
2 1/4	13.52		4 3-16	46.82	
2 5-16	14.35		4 1/4	48.23	
2 3/8	15.07		4 3/8	51.11	
2 7-16	15.87	} 6½ cts.	4 7-16	52.58	} 6½ cts.
2 1/2	16.69		4 1/2	54.07	
2 9-16	17.55		4 11-16	58.67	
2 5/8	18.41		4 3/4	60.25	
2 11-16	19.29		4 15-16	65.10	
			5	66.76	7 cts.



Log Rule, net \$1.50.



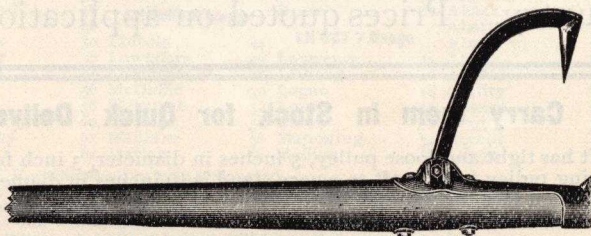
Lumber Rule, net \$1.50.

LOG AND LUMBER RULES COMBINED \$1.75.

CANT HOOKS

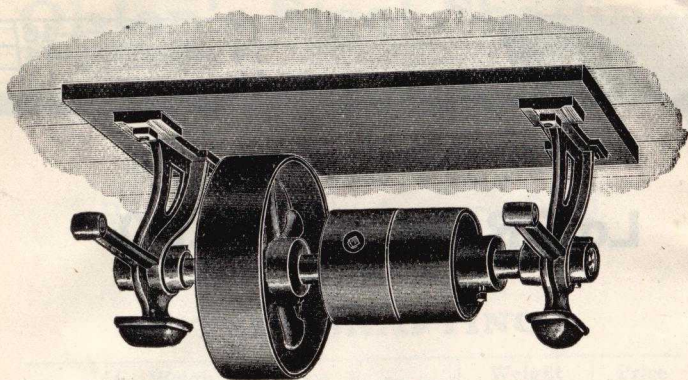
**Large
Size**

\$1.50.



**Smaller
Size**

\$1.25.



Ohlen's Counter Shaft

....FOR EMERY STANDS....

This is a very substantial Counter Shaft of our own make and design. We have over one hundred in use in our own shops besides others in some of the largest shops and mills in the country. Prices quoted on application.

We Carry them in Stock for Quick Delivery

Shaft has tight and loose pulley, 5 inches in diameter, 3 inch face.
Driving pulley from shaft to emery stand is 10 inches in diameter,
3 inch face for $2\frac{1}{2}$ inch belt.
Counter shaft should run 500 revolutions.

JAMES OHLEN & SON'S TELEGRAPH CYPHER

For Use in Ordering Saws

USE NUMERALS FOR QUANTITIES

UNITED—Ship without delay by Freight.

WE —Ship without delay by Express.

STAND —Special number of teeth.

RH Solid 7 Gauge		Echolls	66	Meriwether	60	Meigs	58
Applying	44	Effingham	68	Miller	62	Mercer	60
Baker	46	Elbert	70	Milton	64	LH CCT 8 Gauge	
Baldwin	48	Emanuel	72	Mitchell	66	Morrow	44
Banks	50	LH Solid 7 Gauge		Monroe	68	Noble	46
Bartow	52	Fannin	44	Morgan	70	Ottawa	48
Berrien	54	Fayette	46	Montgomery	72	Pickaway	50
Adams	44	Floyd	48	RH CCT 7 Gauge		Portage	52
Allen	46	Forsyth	50	Adam	44	Preble	54
Ashland	48	Franklin	52	Allen	46	Ross	56
Bibb	56	Fulton	54	Ashland	48	Sandusky	58
Brooks	58	Gilmer	56	Ashtabula	50	Shelby	60
Bryan	60	Glasscock	58	Athens	52	LH CCT 9 Gauge	
Bulloch	62	Glynn	60	Belmont	54	Siark	44
Burke	64	Gordon	62	Brown	56	Summit	46
Butts	66	Greene	64	Butler	58	Trumbull	48
Calhoun	68	Guinnett	66	Champaign	60	Seneca	50
Camden	70	Habersham	68	RH CCT 8 Gauge		Tuscarawas	52
Campbell	72	Hall	70	Clermont	44	Union	54
RH Solid 8 Gauge		Hancock	72	Clinton	46	Van Wert	56
Carroll	44	LH Solid 8 Gauge		Cuyahoga	48	Vinton	58
Catoosa	46	Harrolson	44	Darke	50	Washington	60
Carlton	48	Harris	46	Defiance	52	NUMBER TEETH	
Chatham	50	Hart	48	Delaware	54	Afar	26
Chattahoochee	52	Heard	50	Erie	56	Afoot	28
Chatooga	54	Henry	52	Fairfield	58	Agate	30
Cherokee	56	Houston	54	Gallia	60	Agile	32
Clarke	58	Irvin	56	RH CCT 9 Gauge		Agony	34
Clay	60	Jackson	58	Guernsey	44	Ahoy	36
Clayton	62	Jasper	60	Hamilton	46	Alarm	38
Clynch	64	Jefferson	62	Hardin	48	Alcove	40
Cobb	66	Johnson	64	Harrison	50	Alert	42
Coffee	68	Jones	66	Highland	52	Amazon	44
Colquitt	70	Laurens	68	Hocking	54	Ambrose	46
Columbia	72	Lee	70	Holmes	56	Amherst	48
RH Solid 9 Gauge		Liberty	72	Huron	58	Babel	50
Corella	44	LH Solid 9 Gauge		Knox	60	Baden	52
Crawford	46	Lincoln	44	LH CCT 7 Gauge		Bagdad	54
Dade	48	Lawrence	46	Lawrence	44	Aback	56
Dawson	50	Lumpkin	48	Licking	46	Abaft	58
Decatur	52	McDuffie	50	Logan	48	Abana	60
DeKalb	54	McIntosh	52	Lorain	50	Abase	62
Dodge	56	Macon	54	Lucas	52	Abated	64
Dooley	58	Madison	56	Mahoning	54	Ability	66
Dougherty	60	Marion	58	Medina	56	Absurd	68
Douglass	62					Abut	70
Early	64					Accent	72
						Adage	74

N. B.—Unless otherwise instructed.

A.—Shipment to be made to sender of telegram. Invoice and bill of lading to follow by mail.

B.—For shipments ordered to destination different from residence of sender, invoice and bill of lading will be mailed to sender of telegram.

C.—Saws will be sent standard holes and usual number of teeth.

Kind Timber to be Sawed

Hardwood—Ohlen
All Kinds Timber—Oldest
Soft wood—Manufacturer
Norway Pine—On
Yellow Pine—Earth

Kind of Dresses

Spring Set—Foreign
Swedge Set—Domestic

Mandrell and Pin Holes

2—5-8—3—Faber	2—3-4—4 1-2—Gate
2—5-8—3 1-2—Fabrian	2—3-4—5—Gaston
2—5-8—4—Fabric	2—3-4—6—Gasket
2—5-8—4 1-2—Facade	2—7-8—3—Gather
2—5-8—5—Faction	2—11-15—3 1-2—Habit
2—3-4—3—Faculty	2—11-16—4—Hatton
2—3-4—3 1-2—Fashion	2—11-16—4 3-4—Handy
2—3-4—4—Fatal	



What Some Users Say About Ohlen Saws



W. H. ADAMS, DeQueen, Ark.: My two 60'' 10 gauge
straight Saws do elegant work, in fact all of your goods do.
September 12, 1903.

WILLIAM REID, Greensboro, N. Y.: Have used my Inserted
Tooth Saw two weeks and am well pleased with it.
August, 29, 1903.

A. CONNER, Darby, Mont.: The Saw simply cannot be beat,
54'' Inserted 9 gauge. September 9, 1903.

JOS. BENNETT, Portsmouth, O.: The three 60'' Saws for the
Portsmouth Rim Co., are giving good satisfaction.
May 28, 1903.

BETHEL MFG. CO., Bethel, Me.: The Inserted Tooth Saw is
giving excellent satisfaction. April 27, 1903.

BUCYRUS HANDLE CO., Bucyrus, O.: The 50'' Inserted Tooth
Bolter Saw, 10 gauge, is going fine. June 24th, 1903.

JOHN P. DALE, Nashville, Tenn.: Your Saws are giving
eminent satisfaction. August 31, 1903.

HENSON BROS. & FLEMING, Caldwell, Ala.: The last Saw
we bought of you is the finest we ever run. We drum for your
Saws. June 10, 1903.

CHARLES E. HERR, Durango, Colo.: Your Saws have given
us perfect satisfaction. June 24, 1903.

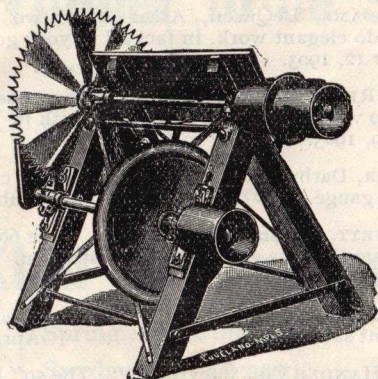
S. V. IREY, Glenmore, Pa.: Your 56'' Inserted Saw is giving
fine satisfaction. July 13, 1903.

AMOS LUTTS, Nordmont, Pa.: Your Saw is alright and runs
good in all kinds of hard wood, hemlock and pine.
July 1, 1903.

WILL D. MARTIN, Waynesville, N. C. Your saw is doing
the best work I have ever witnessed. When in the market we
will certainly buy another Ohlen Saw.

OHIO SOUTHWESTERN LUMBER CO., St. Francis, Ark.: Just
tried the 64'' Solid Tooth Saw, it runs O. K. June 26, 1903.

The Ohlen Clipper Wood Saws.



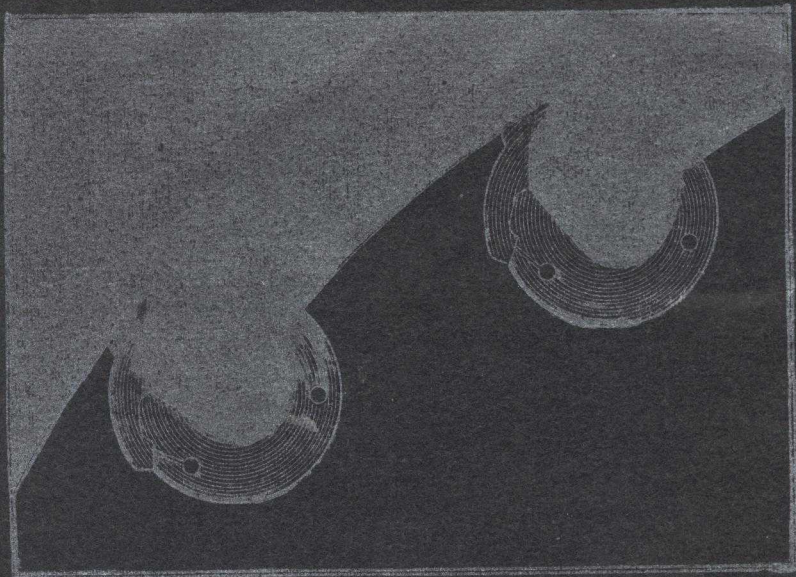
**Made in 12 different Styles and Sizes to carry
blades 20 to 30 inches in diameter.**

Combination wood and iron frames.
Stronger and stiffer than mortice and tenon.
Easily kept rigid by tightening bolts.
Finely finished.
Blade protected from falling wood.
Solid tables.
Springs to operate tables.
Most complete, quickest and easiest saw machine to operate.
Double pulleys on arbors.
Short belt can be tightened while running.
Steel arbors. Boxes take up for wear.

SEND FOR COMPLETE CATALOGUE.

Perfection in Workmanship
Material and Service

OHLEN'S SAWS



Ohlen's Saws Imitated
But Never Duplicated

GENERAL OFFICES AND
FABRIQUES
COLUMBUS, OHIO
U. S. A.

EASTERN AND EXPORT
OFFICE
NEW YORK CITY
U. S. A.